

IN RE: Dominion Energy South Carolina,) ORDER ESTABLISHING
Incorporated's Establishment of a Solar) SOLAR CHOICE TARIFF
Choice Metering Tariff Pursuant to S.C. Code) FOR NEW CUSTOMERS
Ann. Section 58-40-20 (See Docket No. 2019-) BEGINNING JUNE 1, 2021
182-E))

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I. INTRODUCTION

This Docket relates to the Public Service Commission of South Carolina's ("Commission") establishment of a Solar Choice Metering Tariff for Dominion Energy South Carolina, Inc. ("DESC") pursuant to requirements enacted by the South Carolina General Assembly ("General Assembly") in the South Carolina Energy Freedom Act ("Act 62"). The Commission rejects the DESC's proposed Solar Choice Metering Tariff¹ because it did not prove by the preponderance of the evidence that its Solar Choice Tariff complies with Act 62. Additionally, the Office of Regulatory Staff's (ORS) proposed modifications to the DESC's Solar Choice Tariff do not comply with all of the requirements of Act 62. The General Assembly's stated intent for Act 62 is to:

- (1) build upon the successful deployment of solar generating capacity through Act 236 of 2014 to continue enabling market-driven, private investment in distributed energy resources across the State by reducing regulatory and administrative burdens to customer installation and utilization of onsite distributed energy resources;
- (2) avoid disruption to the growing market for customer-scale distributed energy resources; and
- (3) require the commission to establish solar choice metering requirements that fairly allocate costs and benefits to eliminate any cost shift or subsidization associated with net metering to the greatest extent practicable.

S. C. Code Ann. § 58-40-20(A)(1)-(3) (Supp. 2020).

The Commission finds elements of the Solar Choice Tariff proposed by the South Carolina Coastal Conservation League ("CCL"), Southern Alliance for Clean Energy ("SACE"), Upstate Forever, Vote Solar, Solar Energy Industries Association ("SEIA"), and

¹ Throughout this Order, DESC's proposed Solar Choice Metering Tariff may also be referred to as "DESC's proposed Solar Choice Metering Tariff" or "Company's proposed Solar Choice Tariff."

the North Carolina Sustainable Energy Association (“NCSEA”) (collectively, “Joint Intervenors”) provide a tariff proposal² that is generally reasonable and cost effective for which portions thereof can be used by DESC and its residential solar customers which will result in a tariff consistent with the overall framework and specific requirements of Act 62. Further, the Commission finds that elements of the Solar Choice Tariff proposed by Alder Energy Systems, LLC (Alder) provide a tariff proposal that is generally reasonable and cost effective for which portions thereof can be used by DESC for its non-residential solar customers which will result in a non-residential tariff consistent with the overall framework and specific requirements of Act 62. As such, the Commission requires that DESC offer the Solar Choice Tariffs as outlined in this Order to all customer generators that apply on or after June 1, 2021, and to existing NEM customers as described herein.

A. Background on Net Energy Metering in South Carolina

The Commission first considered net metering in South Carolina in response to an ORS petition requesting that the Commission consider implementing various voluntary provisions of Section 1251 of the Energy Policy Act of 2005 (“EPAct”). In 2007, the Commission adopted net metering on a limited basis in Order No. 2007-618, which required South Carolina’s regulated utilities to file net metering tariffs. In 2008, the Commission ordered a twelve-month review of those net metering programs so the Commission could consider whether any changes were warranted at that time. Commission Order No. 2008-416.

² This proposal is commonly referred to in this Docket and transcript as the “Joint Intervenors’ Solar Choice Proposal.”

In 2009, the Commission undertook a review of the experimental net metering tariffs adopted in compliance with the EPAct and approved a settlement that, among other things: (1) standardized the structure of the NEM program for statewide uniformity; (2) allowed a full retail credit (one-to-one kWh offset) under the flat rate for excess energy credits (as opposed to a mandatory time-of-use rate with a demand component); (3) eliminated standby charges; (4) allowed “renewable energy generators” to retain the rights to Renewable Energy Credits, except for those associated with net excess generation; and (5) provided for review of the program in four years. Commission Order No. 2009-552.

Five years later, in 2014, the General Assembly codified the NEM program as part of the South Carolina Distributed Energy Resource Act, S.1189 (“Act 236”). Act 236 capped participation in NEM at “two percent of the previous five-year average of the electrical utility's South Carolina retail peak demand” (S.C. Code Ann. § 58-40-20(B) (2014)), provided a utility had an approved Distributed Energy Resource (“DER”) Program.³ The Commission then approved a settlement (“NEM Settlement”) in Order No. 2015-194 establishing the Act 236 NEM program.

Under the Act 236 NEM program, the Commission established a procedure for annually calculating the value of DERs (the “NEM Methodology”) and for collecting the NEM DER Incentive, which was calculated by subtracting the value of DER from the full retail rate that was offset by each kWh of generation for customer-generators. Under the

³ The SCE&G program was approved by Order No. 2015-512 (July 15, 2015); the Duke Energy Progress (“DEP”) program was approved by Order 2015-514 (July 15, 2015); and Duke Energy Carolina’s (“DEC’s”) program was approved by Order No. 2015-515 (July 15, 2015)

NEM Methodology, the total value of DERs is determined by totaling eleven different cost and benefit components. Commission Order No. 2015-194 defines and provides a calculation methodology for each of those components. The Order also established that full retail net energy metering (i.e., the one-to-one kWh crediting rate) would be offered on a first-come basis through the NEM Settlement effective period (i.e., until January 1, 2021) or until statutory limits on program participation under Act 236 were reached. The NEM Settlement provided that customer-generators applying and receiving service pursuant to the NEM Settlement “shall have the right to remain on that rate, according to the terms and conditions specified in this Settlement Agreement through December 31, 2025.” As a result of Act 236 and the resulting Commission-approved NEM program, the residential solar market in South Carolina has grown substantially. Currently, over 11,000 customers in DESC territory have rooftop solar installed on their homes.

On May 9, 2019, the General Assembly passed Act 62, and on May 16, 2019, Governor Henry McMaster signed the legislation into law. Act 62 modified many of the statutory provisions related to NEM in Title 58, Chapter 40 of the S.C. Code, including extending the terms of the Act 236 NEM Settlement (approved by Order No. 2015-194) for customer-generators applying for NEM service after the effective date of the Act and before June 1, 2021 (“Interim Customer-Generators”). Act 62 required the Commission to open a generic docket to “(1) investigate and determine the costs and benefits of the current net energy metering program; and (2) establish a methodology for calculating the value of the energy produced by customer-generators.” S.C. Code Ann. § 58-40-20(C)(1). The statute further requires the Commission to establish “solar choice metering tariffs” to succeed the

Act 236 NEM program, and stated that the utilities would no longer be able to recover the difference between the value of solar and retail rates for customers taking service under the solar choice tariffs. S.C. Code Ann. § 58-40-20(I).

The Commission opened generic Docket No. 2019-182-E to investigate the costs and benefits of the existing NEM programs and review the methodology for valuing DERs. The hearing in Docket No. 2019-182-E was held on November 17 and November 18, 2020. As of the hearing and consideration of the merits of this Docket, the Commission has not issued a final order in the generic NEM Docket 2019-182-E. However, the Commission must approve utility-specific Solar Choice NEM tariffs to be implemented by May 31, 2021.

B. Notice and Intervention

This docket was opened on September 16, 2020, pursuant to Act 62’s directive, codified in S.C. Code Ann. § 58-40-20(F)(1), that “[a]fter notice and opportunity for public comment and public hearing, the commission shall establish a ‘solar choice metering tariff’ for customer-generators to go into effect for applications after May 31, 2021.” Order No. 2020-622.

Alder Energy Systems, LLC (“Alder Energy”), Frank Knapp, Jr., NCSEA, SEIA, CCL, SACE, Upstate Forever, and Vote Solar intervened. ORS is automatically a party pursuant to S.C. Code Ann. § 58-4-10(B).

II. REQUIREMENTS FOR NET ENERGY METERING UNDER ACT 62

A. Procedural Requirements

S.C. Code Ann. § 58-40-20 sets forth the procedural requirements for the Commission to establish: (1) a generic proceeding to evaluate the costs and benefits of NEM and (2) NEM Solar Choice tariffs for each utility.

Under S.C. Code Ann. § 58-40-20(C), the Commission was directed to open a generic docket by January 1, 2020, to “investigate and determine the costs and benefits of the current net energy metering program” and “establish a methodology for calculating the value of the energy produced by customer-generators.” S.C. Code Ann. § 58-40-20(D) requires that, in evaluating the costs and benefits of the net energy metering program, the Commission considers:

- (1) the aggregate impact of customer-generators on the electrical utility's long-run marginal costs of generation, distribution, and transmission;
- (2) the cost of service implications of customer-generators on other customers within the same class, including an evaluation of whether customer-generators provide an adequate rate of return to the electrical utility compared to the otherwise applicable rate class when, for analytical purposes only, examined as a separate class within a cost of service study;
- (3) the value of distributed energy resource generation according to the methodology approved by the commission in Commission Order No. 2015-194;
- (4) the direct and indirect economic impact of the net energy metering program to the State; and
- (5) any other information the commission deems relevant.

S.C. Code Ann. § 58-40-20(D) (Supp. 2020).

Section 58-40-20(E) further provides that “[t]he value of the energy produced by customer-generators must be updated annually and the methodology revisited every five years.” S.C. Code Ann. § 58-40-20(E) (Supp. 2020).

Section 58-40-20(F) sets forth the procedural requirements for establishing NEM Solar Choice tariffs, stating that “[a]fter notice and opportunity for public comment and public hearing, the [C]ommission shall establish a new tariff to go into effect for applications received after May 31, 2021.” S.C. Code Ann. § 58-40-20(F) (Supp. 2020).

Rooftop solar customers who apply after May 16, 2019, but prior to June 1, 2021, are entitled to continue with retail one-to-one NEM, as established under Order No. 2015-194, through May 31, 2029. S.C. Code Ann. § 58-40-20 (B) (Supp. 2020). Rooftop solar customers who applied prior to May 16, 2019, are entitled to continue on a retail one-to-one NEM rate through December 31, 2025. Commission Order No. 2015-194 at 20.

B. Requirements for Solar Choice Metering Tariffs

i. NEM Solar Choice Tariff Provisions

At the outset of S.C. Code Ann. Section § 58-40-20, the General Assembly states:

- (A) It is the intent of the General Assembly to:
 - (1) build upon the successful deployment of solar generating capacity through Act 236 of 2014 to continue enabling market-driven, private investment in distributed energy resources across the State by reducing regulatory and administrative burdens to customer installation and utilization of onsite distributed energy resources;
 - (2) avoid disruption to the growing market for customer-scale distributed energy resources; and
 - (3) require the commission to establish solar choice metering requirements that fairly allocate costs and benefits to eliminate any cost shift or subsidization associated with net metering to the greatest extent practicable.

S.C. Code Ann. § 58-40-20(A)(1)–(3) (Supp. 2020).

S.C. Code Ann. § 58-40-20(F) sets forth the specific requirements for NEM Solar

Choice tariffs. In particular, § 58-40-20(F)(2) provides that, “[i]n establishing any successor solar choice metering tariffs, and in approving any future modifications, the commission shall determine how meter information is used for calculating the solar choice metering measurement that is just and reasonable in light of the costs and benefits of the solar choice metering program.” S.C. Code Ann. § 58-40-20(F) (Supp. 2020). The term ‘Solar choice metering measurement’ is defined to mean “the process, method, or calculation used for purposes of billing and crediting at the [C]ommission determined value.” S. C. Code Ann. § 58-40-10(G) (Supp. 2020).

A solar choice tariff also must “include a methodology to compensate customer-generators for the benefits provided by their generation to the power system.” § 58-40-20(F)(3). The Commission is required to consider four factors when determining the appropriate billing mechanism and energy measurement interval:

- (a) current metering capability and the cost of upgrading hardware and billing systems to accomplish the provisions of the tariff;
- (b) the interaction of the tariff with time-variant rate schedules available to customer-generators and whether different measurement intervals are justified for customer-generators taking service on a time-variant rate schedule;
- (c) whether additional mitigation measures are warranted to transition existing customer-generators; and
- (d) any other information the commission deems relevant.

§ 58-40-20(F)(3).

S.C. Code § 58-40-20(G) further provides two directives to the Commission in establishing a successor solar choice metering tariff:

- (1) eliminate any cost shift to the greatest extent practicable on customers who do not have customer-

- sited generation while also ensuring access to customer-generator options for customers who choose to enroll in customer-generator programs; and
- (2) permit solar choice customer-generators to use customer-generated energy behind the meter without penalty.

§ 58-40-20(F)(3). The Commission must also “establish a minimum guaranteed number of years to which solar choice metering customers are entitled pursuant to the commission approved energy measurement interval and other terms of their agreement with the electrical utility.” S.C. Code Ann. § 58-40-20(H) (Supp. 2020).

The term “customer-generator” as used in the above quoted sections is defined as “the owner, operator, lessee ... of an electric energy generation unit which...is intended primarily to offset part or all of the customer-generator's own electrical energy requirements.” S.C. Code Ann. § 58-40-10(C)(5) (Supp. 2020).

ii. Other Relevant Provisions of Act 62

Section 1⁴ and Section 2⁵ of Act 62 also govern the Commission’s review of renewable energy issues and rate design proposals, both of which are directly applicable to the establishment of solar choice tariffs. Section 1 of Act 62 requires the Commission to consider renewable energy issues, such as net energy metering programs, in “a fair and balanced manner.” S.C. Code Ann. § 58-41-05 (Supp. 2020). It specifically directs the Commission:

to address all renewable energy issues in a fair and balanced manner, considering the costs and benefits to all customers of all programs and tariffs that relate to renewable energy and energy storage, both as part of the utility’s power system

⁴ Section 1 of 2019 Act 62 added Chapter 41 of Title 58 to the South Carolina Annotated Code of Laws, which is Sections 58-40-05, et. seq.

⁵ Section 2 of 2019 Act 62 added South Carolina Annotated Code of Laws Section 58-27-845.

and as direct investments by customers for their own energy needs and renewable goals.

Id. Moreover, this section directs the Commission “to ensure that the revenue recovery, cost allocation, and rate design of utilities that it regulates are just and reasonable and properly reflect changes in the industry as a whole, the benefits of customer renewable energy, energy efficiency, and demand response.” S.C. Code Ann. § 58-41-05 (Supp. 2020).

Section 2 of Act 62 places additional emphasis on customer access to bill savings through rates that promote energy efficiency, demand response efforts, and onsite renewable energy options. It states that “there is a critical need to: (1) protect customers from rising utility costs, (2) provide opportunities for customers to reduce or manage electrical consumption...and (3) equip customers with the information and ability to manage their electric bills.” S.C. Code Ann. § 58-27-845(A) (Supp. 2020). Act 62 then provides an enumeration of electrical utility customer rights to address those critical needs, including stating that:

Every customer of an electrical utility has the right to a rate schedule that offers the customer a reasonable opportunity to employ such energy and cost-saving measures as energy efficiency, demand response, or onsite distributed energy resources in order to reduce consumption of electricity from the electrical utility's grid and to reduce electrical utility costs.

§ 58-27-845(B). When “fixing just and reasonable utility rates,” the Commission shall:

(C) ... [C]onsider whether rates are designed to discourage the wasteful use of public utility services while promoting all use that is economically justified in view of the relationships between costs incurred and benefits received, and that no one class of customers is unduly burdening

another, and that each customer class pays, as close as practicable, the cost of providing service to it.

(D) For each class of service, the commission must ensure that each electrical utility offers to each class of service a minimum of one reasonable rate option that aligns the customer's ability to achieve bill savings with long-term reductions in the overall cost the electrical utility will incur in providing electric service, including, but not limited to, time-variant pricing structures.

S.C. Code Ann. § 58-27-845 (C)-(D) (Supp. 2020). The Commission must ensure that each utility offers customers at least one reasonable opportunity through DERs, including, but not limited to, rooftop solar and energy efficiency programs and to encourage long term reductions in the electrical utility's overall costs for providing electric service with the use of time-variant pricing structures.

C. Standard of Proof

The Commission must examine the evidence in the record of this proceeding to determine whether the applicant, DESC, proved by the preponderance of the evidence that its proposed Solar Choice Metering Tariff meets all the requirements of Act 62. The Commission finds it necessary to further expound on the factors it must balance under Act 62 and the considerations relevant to whether or not those factors are satisfied.

i. Overall Framework of Act 62's NEM Solar Choice Provisions

The Commission is directed to address "all renewable energy issues in a fair and balanced manner" and to consider the costs and benefits of "all programs and tariffs that relate to renewable energy," including as part of "direct investments by customers for their own energy needs and renewable goals." S.C. Code Ann. § 58-41-05. In the first sentence of the Act, the General Assembly set forth its intent that direct investments in rooftop solar

by customers to meet their own energy needs should remain available option for South Carolinians.

Act 62 sets forth a framework for evaluating proposed rate designs to ensure that the rate structure allows customers to take advantage of rooftop solar, energy efficiency, and demand response. The Commission is required to balance the interests of all ratepayers, including customer-generators and non-participants when establishing Solar Choice tariffs. The Commission is directed to “eliminate any cost shift to the greatest extent practicable” while at the same time “ensuring access to customer-generator options for customers who choose to enroll in customer-generator programs,” “permit solar choice customer-generators to use customer-generated energy behind the meter without penalty,” avoiding “disruption to the growing market for customer-scale distributed energy resources,” and continuing market-driven, private investment in DERs across the state by reducing regulatory and administrative burdens to customer installation and utilization of onsite DERs. As such, Act 62 contemplates a framework for the adoption of solar choice tariffs that avoid disruption to the solar market and ensure continued customer access to solar options in ways that align the interests of all customers.

ii. **“Eliminate Cost Shift to the Greatest Extent Practicable”**

Definition of “Cost Shift”

Act 62 requires that solar choice tariffs eliminate cost shift from solar to non-solar customers “to the greatest extent practicable.” Various parties to this proceeding have presented alternative definitions of “cost shift” to the Commission. The term “cost shift” is not explicitly defined within Act 62, but the term must be understood within the context

of Act 62 as a whole.

The Commission is required to establish solar choice metering requirements that “fairly allocate costs and benefits to eliminate any cost shift or subsidization associated with net metering to the greatest extent practicable.” S.C. Code Ann. § 58-40(A)(3). As such, Act 62 makes clear that a fair allocation of costs and benefits is intended to form the basis of calculating the “cost shift” under Act 62.

Following the requirements for how the costs and benefits of NEM should be determined, Act 62 specifies that the Commission must establish solar choice tariffs that include a “metering measurement that is just and reasonable in light of the costs and benefits of the solar choice metering program,” S.C. Code Ann. § 58-40-20 (F)(2), and “a methodology to compensate customer-generators for the benefits provided by their generation to the power system.” S.C. Code Ann. § 58-40-20(F)(3).

Act 62 requires evaluating “cost shift” in two ways, as contemplated in the provisions of S.C. Code Ann. § 58-40-20(C) and (D). First, it must be considered based on a forward-looking, comprehensive evaluation of the “long-run” costs and benefits of solar, and the resulting impacts to utility system costs. And second, it must be evaluated based on the “cost of service implications of customer-generators on other customers within the same class, including an evaluation of whether customer-generators provide an adequate rate of return to the electrical utility compared to the otherwise applicable rate class when, for analytical purposes only, examined as a separate class within a cost of service study.” S.C. Code Ann. § 58-40-20(D)(2). The information to conduct such an embedded cost-of-service study is exclusively within the hands of the electrical utility. Therefore, Act 62

contemplates that a utility conduct such a study for purposes of evaluating any potential “cost shift” resulting from net metering programs.

The Commission concludes that any definition of “cost shift” that is based exclusively on customer bill savings, or lost revenues to the utility as a result of customer-generators consumption of customer-generated energy behind the meter, or credits for excess generation is incomplete. As such, solar customer bill savings are not an appropriate metric by which to exclusively measure potential cost shift.

Because Act 62 removes the NEM DER Incentive as a cost recovery mechanism for NEM Solar Choice tariffs and prohibits electrical utilities from recovering lost revenues associated with customer-generators who adopt NEM Solar Choice tariffs, it is inappropriate to base cost shift solely on a utility’s lost revenue from solar customers. S.C. Code Ann. § 58-40-20(I). Additionally, it would be improper to equate “cost shift” with reduced revenues to the electrical utility because such reduced revenues reflect only a short-term consequence of customer adoption of DERs and do not take into account the long-term benefits that accrue to the utility system.

“To the Greatest Extent Practicable”

Neither of the two “cost shift” provisions in S.C. Code Ann. § 58-40- 20(A)(3) or § 58-40-20(G)(1) require that the Commission ensure solar choice tariffs eliminate all potential cost shift, but rather, only “to the greatest extent practicable.” S.C. Code Ann. § 58-40-20(G)(1) in particular specifies that cost shift should be eliminated “to the greatest extent practicable...*while ensuring access* to customer-generator options for customers who choose to enroll in customer-generator programs.” S.C. Code Ann. § 58- 40-20(G)(1)

(emphasis added). Act 62 includes other directives and policy objectives that are expressed without qualification. The inclusion of the phrase “to the greatest extent practicable” means that the Commission may not choose to eliminate any potential cost shift at the expense of other objectives in Act 62.

For example, Act 62 provides that the General Assembly explicitly intended to *build* upon the successful deployment of solar generating capacity, *continue enabling* investment in DERs, *reduce* the regulatory and administrative burdens to customers installing DERs, and *avoid* disruption to the growing market for customer-scale DERs. Act 62 also provides that solar choice tariffs must permit customer-generators to consume energy behind the meter without penalty.⁶

iii. **Ensuring Access to Customer-Generator Options**

As noted above, Act 62 specifies that the Commission must “eliminate any cost shift to the greatest extent practicable *while ensuring access* to customer-generator options for customers who choose to enroll in customer-generator programs.” S.C. Code Ann. § 58-40-20(G)(1) (emphasis added). “Ensuring access” requires more than a customer having a technical ability to install rooftop solar. A customer must be *able* to install solar and to have a reason to do so by way of a solar choice tariff that affords them an opportunity for meaningful bill savings. *See* S.C. Code Ann. § 58-27-845(B). This requires that

⁶ *See also* §58-27-845 (B):

Every customer of an electrical utility has the right to a rate schedule that offers the customer a reasonable opportunity to employ such energy and cost-saving measures as energy efficiency, demand response, or onsite distributed energy resources in order to reduce consumption of electricity from the electrical utility’s grid and to reduce electrical utility costs.

customers be able to reduce their consumption from an electrical utility through behind the meter usage and from bill credits for excess generation that goes onto the utility's grid. *See* S.C. Code Ann. § 58-40-20(G)(2) (solar choice tariffs may not penalize solar customers for their behind-the-meter usage) and S.C. Code Ann. § 58-40-20(F)(3) (solar choice tariffs must compensate solar customers for the benefits of their generation to the power system).

iv. Permit Behind the Meter Usage Without Penalty

S.C. Code Ann. § 58-40-20(G)(2) directs the Commission to adopt a solar choice tariff that “permit[s] solar choice generators to use customer-generated energy behind the meter without penalty.” If a solar choice tariff would result in customer-generators paying more to the utility than they would have paid without solar when considering any non-bypassable, fixed mandatory fees and the value of behind the meter consumption, that rate penalizes behind the meter consumption. Further, Act 62 defines a “customer-generator” as “the owner, operator, lessee, or customer generator lessee of an electric energy generation unit which . . . is intended primarily to offset *part or all of the customer generator’s own electrical energy requirements.*” § 58-40-10(C)(5) (emphasis added). This provision clarifies that Act 62 intends for rooftop solar customers to be able to invest in solar systems sized appropriately to be capable of offsetting all the customer’s energy usage.

v. Evaluation of Solar Choice Metering Tariff Proposals

The Commission must make its decision based on the evidence in the record before it. Therefore, the Commission must determine if the applicant, DESC, proved by the preponderance of the evidence that its Solar Choice Tariff, meets the requirements of Act

62. To the extent that DESC's proposed Solar Choice Metering Tariff does not meet the requirements of Act 62, then the Commission must evaluate other proposals offered in the record to determine if such proposals comply with Act 62.

III. HEARINGS

A. Merits Hearing

The Commission convened a virtual hearing on this matter on February 23, 2021, through March 2, 2021, with the Honorable Justin T. Williams, Chairman, presiding. The Honorable Thomas J. Ervin recused from the matter and did not participate in the proceeding, deliberations, or subsequent Commission decision. DESC was represented by K. Chad Burgess, Esquire, and Matthew W. Gissendanner, Esquire. Alder Energy was represented by R. Taylor Speer, Esquire. Mr. Knapp, intervenor, represented himself. NCSEA was represented by Jeffrey W. Kuykendall, Esquire, and Peter Ledford, Esquire. SEIA was represented by Jeffrey W. Kuykendall, Esquire. CCL, SACE, and Upstate Forever were represented by Kate Lee Mixson, Esquire, and David L. Neal, Esquire. Vote Solar was represented by Thadeus B. Culley, Esquire, and Bess DuRant, Esquire. ORS was represented by Jeffrey M. Nelson, Esquire, Jenny R. Pittman, Esquire, and Andrew M. Bateman, Esquire.

DESC presented the direct and rebuttal testimony of Danny Kassis, Margot Everett, and Scott Robinson, and the direct testimony of Allen Rooks. Alder Energy presented the direct and surrebuttal testimony of Donald R. Zimmerman. SEIA and NCSEA presented the direct and surrebuttal testimony of Justin R. Barnes, CCL, SACE, Upstate Forever, Vote Solar, SEIA, and NCSEA jointly presented the direct and surrebuttal testimony of R.

Thomas Beach. CCL, SACE, and Upstate Forever presented the surrebuttal testimony of Eddy Moore. ORS presented the direct testimony of Robert A. Lawyer and Brian K. Horii. Mr. Knapp did not present witnesses at the hearing.

B. Virtual Public Hearing and Public Comments

Pursuant to a Commission Directive Order No. 2021-26, granting Vote Solar's *Motion to Require Additional Notice and Establish a Public Participation Hearing*, a virtual public participation hearing was held on March 23, 2021, and an opportunity for parties to respond to public comments was set for March 25, 2021, at 9:00 am. Given the large number of people that signed up for the single day designated for public hearing, the Commission allowed ten public witnesses that were unable to speak at the March 23 virtual public hearing the opportunity to speak at the beginning of the March 25 hearing set for party responses.

On March 22, 2021, the Commission held oral arguments to hear the Company's request to strike certain individuals from testifying that were not DESC account holders and not, in the Company's definition, customers of the Company as described in the public notice describing the March 23, 2021 virtual public hearing. The Commission resolved to allow all persons that signed up to testify, and to ask the following preliminary questions of all witnesses: (1) name; (2) street name and city/town of residence; (3) whether the person is a customer of the Company; and (4) whether the person has a rooftop solar facility.

By the close of business March 22, 2021, two hundred and fifty-two (252) persons had signed up to speak at the virtual public hearing. The Commission convened a virtual public hearing on March 23, 2021, with the Honorable Justin T. Williams, Chairman,

presiding. Each person was assigned an estimated time slot for up to three (3) minutes of sworn public testimony. The Commission allowed parties to ask questions of the public witnesses after conclusion of each person's testimony and comment. The Commission also asked questions of public witnesses. Given the unanticipated amount of questioning from the parties and the Commission, approximately one hundred and fifty-four (154) persons were able to provide public testimony during the virtual hearing which began at 9:00 a.m. on March 23 and extended past 1 a.m. on March 24.

The Commission convened a virtual public hearing on March 23, 2021, with the Honorable Justin T. Williams, Chairman, presiding. Of the one hundred and fifty-four (154) persons that spoke, approximately one hundred and fifty (150) provided testimony in opposition to the Company's proposed Solar Choice Metering Tariff. Of those opponents of the Company's proposal, one hundred thirty-four (134) were DESC customers. There was a total of ninety-four (94) persons who attested that they currently had solar generation facilities on their homes or businesses, and from those currently with solar generation approximately ninety-one (91) were DESC customers. From all of the persons testifying, approximately twenty-five (25) persons identified themselves as persons employed in a business related to the installation of solar. Twelve (12) of the solar workers attested that they were not DESC customers, while the other thirteen attested that they did receive electric service from the Company. Two (2) individuals spoke affirmatively in support of DESC's Solar Choice Metering Tariff. Those persons were not DESC customers and were associated with the electric industry's trade group, the Edison Electric Institute, and provided testimony from out-of-state.

The public witnesses opposing the Company's proposed Solar Choice Metering Tariff cited both economic and environmental concerns for what impact the proposal would have on them personally and the state as a whole. Many solar customers, who acknowledged they would not be impacted for a number of years by the current proposal, nonetheless spoke out that they wanted other customers to have the same access and choices that they had to adopt solar for purposes of addressing climate change or reducing their own monthly electric bills. The two (2) public witnesses expressing support for DESC's proposed Solar Choice Metering Tariff cited national trends of changes to net metering and the need to address cross-subsidization issues generally. The solar workers who provided testimony expressed concern that DESC's proposed Solar Choice Metering Tariff would result in the elimination of jobs and threaten their ability to make a good income and provide for their families.

Of the witnesses providing testimony during the virtual public hearing, approximately forty (40) individuals were asked questions by counsel for the parties, including instances where witnesses were questioned by more than one party. Counsel for DESC questioned approximately thirty-eight (38) public witnesses, often asking questions to verify if the person speaking was an account holder or, if the person had attested to having rooftop solar, whether the person owned or leased the rooftop solar facility. Counsel for SACE, CCL, and Upstate Forever asked questions of four (4) witnesses. Counsel for Alder Energy asked questions of three (3) public witnesses. Counsel for ORS asked questions of three (3) public witnesses. The Commission asked additional questions of many public witnesses, including many witnesses that were not questioned by the other parties.

Given the inability to contact all two hundred and fifty-two (252) individuals that signed up to give public testimony due to the length of the hearing, lateness of the evening or technical issues in calling these witnesses, the Commission provided several individuals who expressed the desire to provide testimony, despite being unable to speak in the late hours when the virtual public hearing concluded. The opportunity for these individuals to speak was provided on Thursday, March 25, 2021, prior to the Commission hearing the parties' responses to the public testimony given at the virtual public hearing. Ten (10) individuals were contacted to give testimony, but only eight (8) were able to testify or answered their phones after multiple attempts. Of those eight (8), one (1) witness who was not a customer of DESC voiced general opposition to subsidies associated with solar but did not discuss DESC's proposed Solar Choice Metering Tariff directly. Seven (7) of these public witnesses testifying on March 25th voiced opposition to DESC's proposed tariff, which comprised four (4) solar customers of the Company and two (2) solar workers who were also DESC customers. Counsel for DESC asked questions of five (5) of these eight (8) public witnesses; counsel for SACE, CCL, and Upstate Forever and counsel for Alder Energy each asked questions of only one (1) of these March 25th public witness.

IV. FINDINGS OF FACT

Based on the testimony and exhibits received into evidence at the hearing and the entire record of these proceedings, the Commission hereby makes the following findings of fact:

Evaluation of DESC's Proposed Solar Choice Metering Tariff

1. DESC's methodology for calculating cost shift, as discussed in the

testimony of Witness Everett, is unreasonable because its methodology does not consider all of the benefits of customer-generated solar.

2. DESC's calculation of cost shift, as set out in Witness Everett's testimony, is unreasonable because DESC considered only the short-term costs to the utility from customers adopting distributed solar, but not the long-term benefits as required by Act 62. The only benefits considered were avoided energy costs at PURPA avoided cost rates (and those benefits were assumed only to the extent of a 3 kilowatt solar PV system, which is less than half the size of the average customer-generator system in DESC's service territory).

3. DESC's calculation of cost shift, as set out in Witness Everett's testimony, is unreasonable because DESC has not conducted a cost of service evaluation looking at whether customer-generators provide an adequate rate of return compared to other customers within the same rate class as required by Act 62.

4. DESC's proposed \$19.50 Base Facilities Charge ("BFC") is unreasonable.

5. DESC's proposed \$5.40 per kW Subscription Fee is unreasonable, not cost-based, and would penalize solar customers' behind the meter usage in violation of Act 62.

6. DESC's proposal to credit solar exports at avoided cost rates is reasonable and consistent with Act 62.

7. The Commission finds that the time-of-use ("TOU") periods in DESC's proposal are unreasonable because they do not align with the coincident system peak period identified in the Company's embedded cost of service study to allocate generation and transmission costs.

8. The Commission finds that DESC’s proposal to recover avoided cost credits to solar customers as “purchased power fuel expenses” under the fuel clause, even for solar exports it sells at retail rate, would allow the utility to more than double recover for its costs; it is reasonable to prohibit the utility from recovering avoided cost credits as purchased power fuel expenses for any solar exports sold at the retail rate.

9. DESC’s proposed change from annual netting to fifteen-minute interval netting, which would increase the number of exports credited at avoided cost rates as opposed to retail rates, is unreasonable because it fails to adequately compensate customer-generators for the benefits they provide to the system.

10. DESC’s proposed Solar Choice Metering Tariff would discourage solar photovoltaic (“PV”) systems that are sized to offset all of a customer-generator’s own electrical energy requirements and instead is designed to only be economical for small solar PV systems that supply no more than 40% of a customer’s usage. By limiting the economically viable size of a rooftop solar system to offset only a small portion of a customer-generator’s own electrical energy requirements, DESC’s Solar Choice Proposal is not in compliance with Act 62.

11. DESC’s proposed Solar Choice Metering Tariff would penalize solar customers’ behind the meter usage. DESC’s proposed Solar Choice Metering Tariff will substantially reduce customer bill savings, significantly increase payback periods, remove rooftop solar as an economically viable option for most of DESC’s residential customers, and disrupt the solar market in South Carolina in contravention of Act 62.

Evaluation of ORS Proposed Modifications to DESC Solar Choice Tariff

12. ORS's proposal accepts the premises and overall framework of DESC's proposed Solar Choice Metering Tariff, with modifications made only to subscription fee and TOU rates that are designed to further reduce bill savings to customers who accept service under solar choice tariffs.

13. ORS's calculation of cost shift, as determined in Witness Horii's testimony, is unreasonable because it does not reflect the methodology that DESC uses to determine the costs to serve its customers.

14. ORS's Modifications to DESC's proposed Solar Choice Metering Tariff would reduce solar customers bill savings even further than DESC's proposal and further penalize solar customers' behind the meter usage.

15. Like DESC's proposed Solar Choice Metering Tariff, ORS's Proposed Modifications would reduce customer bill savings, significantly increase payback periods, remove rooftop solar as an economically viable option for most of DESC's residential customers, and disrupt the solar market in South Carolina in violation of Act 62.

Evaluation of Joint Intervenors' Solar Choice Proposal

16. Consistent with Act 62's requirement to permit solar choice customer-generators to use customer-generated energy behind the meter without penalty, it is appropriate to value behind the meter consumption at prevailing retail rates. From the utility system perspective, behind the meter consumption of customer-generated electricity is equivalent to energy efficiency or demand-side management measures as a decrement to system load; therefore it is reasonable to value behind the meter

consumption of customer-generated energy the same as energy-efficiency savings or conservation efforts realized by non-customer generators.

17. Consistent with Act 62’s requirement to “fairly allocate costs and benefits to eliminate any cost shift or subsidization associated with net metering to the greatest extent practicable” and to consider “the aggregate impact of customer-generators on the electrical utility’s long-run marginal costs of generation, distribution, and transmission,” it is reasonable to evaluate a solar choice proposal under standard practice manual cost-effectiveness tests. In the absence of the cost of service study required by § 58-40-20(D)(2), any analysis of the cost to serve customer-generators from an embedded cost of service perspective should use the same underlying methodologies for allocating costs that are actually used by the utility.

18. The Participant Cost Test (“PCT”) is appropriate for considering whether the Solar Choice customer-generator program provides a reasonable economic opportunity for customers to invest in and use DERs.

19. The Utility Cost Test (“UCT”) is appropriate for considering whether any additional costs that result from customer-generator adoption of solar PV or DERs are offset by the direct benefits of the customer-generator and whether a potential cost-shift might occur.

20. The Total Resource Cost (“TRC”) and Societal Tests are appropriate as secondary tests to be used in conjunction with the PCT and UCT in evaluating the overall cost-effectiveness of the Solar Choice proposals to determine whether solar resources provide a net benefit to the utility system, its customers, and society more broadly.

21. When considering the costs and benefits under these standard practice manual cost effectiveness tests, it is appropriate to quantify and consider all of the benefits included in the value stack from Order No. 2015-194 and to consider those benefits on a long-term basis. The appropriate time horizon for evaluating the benefits and costs of distributed solar energy resources is twenty (20) years, the typical useful life of a solar PV system.

22. The portions of the Joint Solar Choice Proposal approved in this Order result in a reduction in bill savings when compared to the existing NEM program.

23. The portions of the Joint Solar Choice Proposal approved in this Order do not cause a significant potential cost-shift when considering the cost to serve residential solar customer-generators under DESC's existing embedded cost of service methodology.

24. The payback periods resulting from the approval of the specified portions of the Joint Solar Choice Proposal are consistent with continued access to solar energy options for South Carolinians in DESC's service territory and will avoid disruption to the growing market for customer-scale DERs. Moreover, the resulting minimum period of tariff availability is 10-years.

25. The portions of the Joint Solar Choice Proposal approved in this Order are just and reasonable and comport with the requirements of Act 62.

26. On or after June 1, 2021, residential customers who elect to enroll in the solar choice program would take service under the TOU rates of DESC's current Rate 5.

27. For purposes of the establishment of a solar choice tariff in this proceeding, the inclusion of a \$13.50 minimum bill, which includes a BFC of \$9.00, is a reasonable

reflection of customer-related costs; because this issue is under dispute in the Company's pending rate case,⁷ it is subject to potential future adjustment.

28. Non-Residential Customer Generators require additional and differing considerations in the adoption of a Solar Choice Metering Tariff that is appropriately tailored to accurately reflect the financial and technical concerns of such customer generators.

29. Considering this legislative standard and the considerable evidence in this proceeding, the Commission rejects DESC's Small General Service Solar Choice Tariff. Instead, the Commission finds that a reasonable Solar Choice Metering Tariff for non-residential customer-generators would have the following characteristics: non-residential customer-generators would take service under DESC's Rate 16 [time-of-use rate general service]; all excess on-peak kWh shall be rolled over the subsequent months as credits only against subsequent on-peak consumption; annual excess net exports will be applied as a bill credit at the same rate as the Commission determines from its order in Docket 2019-182-E; and the customer-generator shall have all right and title to own and transfer RECs attributable to their generation.

V. REVIEW OF EVIDENCE AND EVIDENTIARY CONCLUSIONS

The Commission has considered and evaluated the following solar choice proposals and recommendations presented by the parties in this proceeding: (1) DESC's proposed

⁷ Docket No. 2020-125-E (which is scheduled to resume the hearing on the merits on July 12, 2021). The Office of Regulatory Staff with agreement of all parties, without objection, request a ratemaking "pause" to recess the merits hearing for six (6) months due to the extraordinary economic events and adverse circumstances confronting DESC ratepayers at this time and reflected in the record in this case and to allow the parties to discuss settlement. *See* Commission Order No. 2021-18.

Solar Choice Metering Tariff (also referred to as “DESC’s proposed Solar Choice Metering Tariff”); (2) ORS Proposed Modifications to DESC’s Solar Choice Proposal; (3) Alder Energy’s recommendations; and (4) Joint Intervenors’ Solar Choice Proposal. The Commission finds that DESC did not prove by the preponderance of the evidence that its Solar Choice Proposal complies with the requirements of Act 62. ORS’s Proposed Modifications to DESC’s Solar Choice Proposal do not comply with the requirements set out in Act 62. For the reasons set out below which are based upon the evidence in the record, the Commission concludes that some recommendations offered by the Joint Intervenors and Alder Energy in their respective proposals result in a solar choice tariff that complies with the requirements of Act 62.

A. Evaluation of DESC’s proposed Solar Choice Metering Tariff

**EVIDENCE AND CONCLUSIONS SUPPORTING FINDINGS OF FACT
NOS. 1-11**

i. Summary of Evidence

The evidence in support of these findings of fact is found in the pleadings, testimony and exhibits in this Docket, and the entire record in this proceeding.

DESC’s Proposed Solar Choice Metering Tariff

DESC Witness Allen Rooks sponsored the DESC’s proposed Solar Choice Metering Tariff and presented direct testimony discussing the components included therein. The DESC’s proposed Solar Choice Metering Tariff for residential customers consists of five primary components:

- (1) a proposed Basic Facilities Charge (“BFC”) of \$19.50 per month;
- (2) a proposed Subscription Fee of \$5.40 per kW of installed renewable

generation, with a minimum monthly Subscription Fee of \$16.20, which is based on a system size of 3 kW;

(3) time of use (“TOU”) periods with on-peak hours of 5:00 A.M. to 9:00 A.M. during winter months (December through February) and 4:00 P.M. to 8:00 P.M. during summer months (June through September), excluding Sundays and specified holidays;

(4) proposed energy charges for solar choice customers of \$0.18417 per kWh for on-peak winter; \$0.16749 per kWh for on-peak summer; and \$0.06735 per kWh for all off-peak usage, which covers almost 92% of the hours in a year;

(5) excess power exported to the grid is credited at time-based avoided cost rates, with a value of \$0.03622/kWh off-peak, \$0.03651/kWh on-peak summer, and \$0.03796/kWh on-peak winter; and

(6) a proposed change from annual netting to fifteen-minute interval netting, significantly increasing the amount of solar production that is credited at avoided cost rates as opposed to retail rates.

(Tr. pp. 481.6 – 481.7; Tr. p. 477, ll. 17-21).

DESC Witness Margot Everett submitted testimony regarding the underlying analysis and development of DESC’s Solar Choice Proposal. (Tr. pp. 228 – 231). According to Witness Everett, the DESC’s proposed Solar Choice Metering Tariff was developed to “alleviate the magnitude of the cost shift” from solar to non-solar customers in accordance with Act 62. (Tr. p. 232.4; *see also* Tr. p. 229).

Witness Everett testified there are two types of cost shift under the “current NEM Structure,” which she terms “banking cost shift” and “rate design cost shift.” (Tr. p. 232.18, ll. 2-17; Tr. p. 229, ll. 7-13). Witness Everett used an example to explain the calculation of a banking cost shift. She testified: “the typical NEM customer exports 6,148 kWh a year and uses that to offset load in other hours. Since the cumulative bill savings to the customer for netting is approximately \$691 and the avoided cost of those exports is \$216, the “Banking” cost shift [is] \$475.” (Tr. p. 232.19, ll. 11-16). Witness Everett testified that the typical NEM customer in DESC territory exports 6,148 kWh per year, representing a cumulative bill savings of approximately \$691; since the avoided cost of those exports is \$216 (using PURPA avoided cost values), Witness Everett calculated that the “banking” cost shift for the typical NEM customer each year would be \$475. *Id.* For customer-generators who install a PV system that offsets all of their peak usage, the size of the “banking” cost shift will increase. (Tr. p. 232.26, ll. 16-18).

The “rate design cost shift,” according to Witness Everett, is associated with behind the meter self-consumption, which she asserts allows solar customers to avoid “fixed costs” the utility otherwise collects through volumetric rates. (Tr. p. 232.22, l. 11 – p. 232.23, l. 3). By subtracting PURPA avoided costs from a customer’s bill savings due to behind the meter usage (assuming a 3-kilowatt solar PV system), Witness Everett calculated that the “rate design cost shift” for a typical NEM customer was \$459. (Tr. p. 232.23, ll. 11-14). According to Everett, a typical residential customer causes an annual cost shift totaling \$934 due to this combination of “banking” and “rate design” cost shift, which, according to Witness Rooks, translates to a \$1.38 per month cost shift for each non-participating

customer. (Tr.p. 232.26, ll. 1-3; Tr. p. 479, ll. 9-17).

Witness Everett used a three-step process to develop the DESC's proposed Solar Choice Metering Tariff. (Tr. p. 232.29, ll. 11-22). First, Witness Everett determined the revenue requirement that must be collected to ensure that the DESC's proposed Solar Choice Metering Tariff was "revenue neutral" for DESC, meaning that the rate design would result in a solar customer paying the same amount under the Solar Choice Tariff as he would pay prior to installing solar (with a small allowance for behind the meter consumption of a 3 kilowatt system at avoided cost rates). (Tr. pp. 258 l. 18 – p. 259 l. 2; Tr. pp. 232.29, ll. 14-17, 232.32, ll. 6-13). Witness Everett then categorized the revenue requirement into rate components segmented by function and then by whether the associated costs were, in her view, fixed, variable, or time-differentiated. (Tr. p. 232.29, ll. 18-20). Finally, Witness Everett identified rate mechanisms to recover each of those rate components. (Tr. p. 232.29, ll. 21-22). At the hearing, Witness Everett testified that the delayed implementation of DESC's Solar Choice Proposal for existing customer-generators until 2025 or 2029 was a sufficient "mitigation measure...to transition existing customer-generators," as required under S.C. Code Ann. § 58-40-20(F)(3). (Tr. p. 283, l. 15 – p. 284, l. 2).

DESC Evidence in Support of Increasing the Base Facilities Charge

Witness Everett set the BFC for DESC's Solar Choice Proposal to recover the full amount of the per account "customer-related" costs for the residential class that were identified by DESC in the Company's cost of service study in the pending rate case in Docket No. 2020-125-E. (Tr. pp. 232.34, ll. 1-3, 232.42, ll. 4-10). At the hearing, Witness

Everett testified that if the Commission approved a different BFC in the ongoing rate proceeding than the \$19.50 proposed in the DESC's proposed Solar Choice Metering Tariff it would not "materially matter...because... what was not covered by the BFC would move into the subscription charge." (Tr. p. 303, ll. 14-20).

DESC Witness Rooks also testified that the \$19.50 per month BFC is required to recover DESC's customer-related costs as set forth in the Company's current rate case. (Tr. p. 481.6, ll. 1-3). Witness Rooks acknowledged that he sponsored testimony in the Company's pending rate case in support of a \$2.50 per month increase to the BFC for most residential customers. (Tr. p. 515, ll. 4-10). In the rate case, Witness Rooks testified that the Company is keenly aware of the impact of an increase of the BFC on customers who are below average consumers of electricity. (Tr. p. 513, ll. 19-14). Witness Rooks confirmed that the proposed \$10.50 increase in the BFC for solar choice customers does not comport with principles of gradualism. (Tr. p. 515, l. 11 – p. 516, l. 9). He also acknowledged that if the Commission ruled in the ongoing rate case that the distribution costs DESC seeks to recover as part of the \$19.50 BFC should not be classified as "customer-related," then the proposed solar choice BFC would come out to a "different number." (Tr. p. 512, l. 15 – p. 513, l. 5). On cross-examination, Witness Rooks further acknowledged, with respect to fixed charges generally, that if a large percentage of a customer's bill is an unavoidable fixed charge, it reduces that customer's ability to manage their electric bill. (Tr. p. 537, ll. 11-17).

DESC Evidence in Support of its Proposed Subscription Fee

Witness Everett testified that the Subscription Fee is designed to collect costs

related to the Company's transmission and distribution ("T&D") systems and to make up for the reduction in "fixed" costs that would otherwise be collected from customer generators as they save money on their bills from their on-site solar production. (Tr. p. 232.43, ll. 1-4). Witness Everett's calculation of "rate design" cost shift—based on the savings current NEM customers receive for behind the meter consumption of on-site generated electricity—provided justification for the Subscription Fee. (Tr. pp. 232.24, l. 10 – 232.25, l. 10; Tr. p. 230, ll. 15-18). Witness Everett calculated the Subscription Fee based on eliminating the rate design cost shift minus a credit for the "value" of self-generation based on an assumed 3 kW system size valued at avoided cost rates. (Tr. pp. 232.43, l. 1 – 232.44, l. 4). Witness Everett then rounded up the resulting figure to a higher number to make the rate more "customer friendly." *Id.* Witness Everett testified that the Subscription Fee is not a penalty because it is designed so that the customer does not avoid paying fixed costs that are attributable to them and "includes the value of the self-generation as a credit against these fixed costs." (Tr. p. 232.50, ll. 2-15).

At the hearing, Witness Rooks spoke briefly about the minimum charge under the Subscription Fee. In response to a question from Commissioner Belser asking whether someone who could not afford a 3 kW system and so installed a 1.5 kW system would be "penalized" by the \$16 minimum Subscription Fee, Witness Rooks testified that the customer would still be supporting the fixed investment with a "two-way power flow[]" and that DESC had tried to align the costs and pricing. (Tr. p. 601, l. 15 – p. 602, l. 6). However, Witness Rooks agreed with Commissioner Belser that a customer with a 1.5 kW system who was paying minimum of \$16.20 would not be paying a fee based on the size

of the system. (Tr. p. 602, ll. 7-11).

DESC Evidence in Support of its Proposed TOU Rates

Witness Everett testified that a component of “rate design” cost shift can be avoided by shifting to TOU rates that provide different savings levels depending on when they self-generate. (Tr. p. 232.25, ll. 11-17). According to Witness Everett, TOU rates should be used in combination with one or more of the rate design elements that she recommended, such as subscription fees, fixed customer charges, or demand charges. (Tr. p. 232.24, l. 18 – p. 232.25, l. 17). To develop DESC’s proposed TOU rates, Witness Everett used the 2019 load profiles before customer-generators installed solar to determine the ratio of TOU period kilowatt-hours to total kilowatt-hours for each time period. (Tr. p. 232.45, ll. 2-12).

The DESC’s proposed Solar Choice Metering Tariff does not include a transition plan for existing customer-generators onto the mandatory TOU rates, as contemplated by S.C. Code Ann. § 58-40-20(F)(3). Witness Everett suggested that the delayed implementation for those existing customers until 2025 or 2029 was a sufficient “mitigation measure...to transition existing customer-generators.” (Tr. p. 283, l. 15 – p. 284, l. 2). Witness Rooks likewise testified that additional mitigation measures were not warranted for existing customer-generators. (Tr. p. 558). Witness Everett agreed that it was useful for customers to understand the implications of moving from one tariff to another, but she guessed that by the first transition in 2025, most customers would have hourly usage meters and a few years of interval data to inform their transition. (Tr. p. 284, l. 22 – p. 285, l. 16). However, Witness Everett acknowledged that the hourly data required to understand the implications of a new rate is not currently available to customers and she

did not know whether DESC had taken any steps to educate customers about the DESC's proposed Solar Choice Metering Tariff. (Tr. p. 286). Witness Everett was aware that during the transition to mandatory TOU rates in California, customers were given a "best bill provision" for the first year as they became familiar with how their bills were changing. (Tr. p. 287, ll. 10-16).

DESC Evidence in Support of its Proposed Export Credit

Witness Everett testified that DESC's proposed export rates are based on "time differentiated avoided costs" that are paid to utility-scale solar generators, but averaged to the same TOU periods as the DESC's proposed Solar Choice Metering Tariff rate. (Tr. p. 232.46, ll. 6-12). Though time differentiated, there is little difference between the [proposed] summer peak export rate (\$.03651/kWh), the off-peak export rate (\$.03622/kWh), and the winter peak export rate (\$.03796/kWh). (Tr. p. 232.47, ll. 1-7).

Witness Everett acknowledged that DESC's current retail rates (and the pending retail rates in its rate case) are based on a summer coincident peak that allocates all generation and transmission costs based on the class contribution to summer system peak that occurs between 2:00 pm and 6:00 pm on a summer afternoon. (Tr. p. 251, l. 1-8). However, Witness Everett did not consider the degree to which current solar customer-generators contribute to a reduction in their class's contribution to the utility's summer coincident peak, and thus, result in a savings to all residential customers when allocating the utility's generation and transmission costs. (Tr. pp. 251, l. 23 – 252, l. 2).

At the hearing, Witness Rooks agreed that there were more on-peak hours in the existing DESC residential Rate 5 TOU tariff than the TOU rates proposed in the DESC's

proposed Solar Choice Metering Tariff. (Tr. p. 521, l. 12 – 522, l. 5; p. 524, ll. 12-15). He also acknowledged that there was a steeper price differential between peak and off-peak hours in Rate 5 than in DESC’s proposal, meaning that Rate 5 sends stronger price signals for consuming in the off-peak periods. (Tr. p. 522, ll. 6-9).

In his direct testimony, Witness Rooks noted that “DESC will recover the avoided cost credits paid to customer-generators for excess power exported to the grid as purchased power fuel expenses as permitted under the Fuel Clause, and in a similar manner as its existing PURPA-related power purchases.” (Tr. p. 481.10, ll. 8-11). Witness Rooks did not explain whether the Company would seek to recover these costs even for solar exports the Company sold to other customers at retail rate.

DESC Evidence in Support of its Proposed Low Volumetric Rates

At the hearing, DESC Witness Rooks admitted that the way for customers under the DESC’s proposed Solar Choice Metering Tariff to save money was through their consumption of electricity from DESC’s proposed low volumetric rate. (Tr. p. 524, l. 22 – p. 525, l. 3). Witness Rooks further testified that he agreed that rates should promote efficient use of electricity and recalled testifying in the general rate case that “rates should be designed to recover costs and to provide clear signals to promote the efficient use of electricity.” (Tr. p. 527, l. 10 – p. 528, l. 11). However, Witness Rooks—DESC’s Manager of Electric Pricing and Rate Administration—testified he was not specifically familiar with S.C. Code Section 58-27-845, which states that “there is a critical need to: (1) protect customers from rising utility costs; and (2) to provide opportunities for customer measures to reduce or manage electrical consumption from electrical utilities in manner that

contributes to reductions in utility peak electrical demand and other drivers of electrical utility costs” and places emphasis on giving customers the ability to reduce energy bills through energy efficiency measures. (Tr. p. 529, l. 24—p. 530, l. 3, p. 533, ll. 12-18). Witness Rooks testified that he had not analyzed how the low volumetric rate under the DESC’s proposed Solar Choice Metering Tariff might affect a customer-generator’s incentives or economic interest to invest in energy efficiency. (Tr. p. 539, l. 24 – p. 540, l. 6). Witness Rooks testified that he is familiar with the concept of the price elasticity of electricity and acknowledged that as a price for a good goes down, that all other things being equal, consumption of that good is likely to increase. (Tr. p. 540, l. 22 – p. 541, l. 1).

Witness Everett also testified that she “did not analyze the implications of implementing a time-of-use rate on energy-efficiency investment” and further observed during cross-examination, that “[o]n average, if the customer’s cost per kilowatt-hour is lower, then the economic decision to install energy efficiency would be impacted.” (Tr. pp. 273, ll. 17-21, 274, ll. 16-18).

DESC Evidence in Support of Fifteen Minute Interval Netting

From the DESC Proposed “Subscription Solar Choice” tariff, the netting interval is not made explicit to potential solar choice customers. (HE. 6 [Rooks Direct Ex. AWR-1]). From the evidence presented at the hearing, it is not apparent to the Commission whether DESC would allow credits from behind the meter consumption to roll over to subsequent months in the event that a customer-generator’s behind the meter consumption offset all of his or her net consumption of electricity from DESC. To the extent customers are not allowed to roll-over any credits from excess exports of electricity from one month to the

next, those customers could also lose the value of that exported electricity.

DESC Evidence Related to Cost-Shift

According to Witness Everett, the DESC's proposed Solar Choice Metering Tariff would "moderat[e] the impacts to non-participants that they experience under the current NEM program." (Tr. p. 232.50, ll. 19-21). On cross examination, when asked whether the "current NEM program" referred to the DER NEM incentive under Act 236, Witness Everett testified that she was not familiar with the DER NEM incentive, and was not referring to that cost-recovery mechanism when she testified that current NEM customers are causing a cost-shift to non-participating customers. (Tr. pp. 252, l. 3 – p. 253, l. 16). Witness Everett agreed that any potential cost shift would not be imposed on non-participating customers until and unless those costs were allowed to be recovered in a future general rate case, at which time the Commission could consider other factors such as savings related to customer-generators and the reasonableness and prudence of the utility's expenses. (Tr. p. 255). Witness Everett further acknowledged that, under the structure of the NEM DER incentive, were the Company to quantify a value for avoided T&D costs, the incentive would decrease. However, on redirect, Witness Everett testified that the NEM DER incentive collected in the Company's annual fuel docket is a way that costs from NEM are passed along to non-customer generators. (Tr. p. 361, ll. 20-24).

Witness Rooks admitted during cross-examination that the NEM portion constituted only 46 percent of the overall NEM DER incentive, which is capped at \$1.00 per month for residential customers. (Tr. p. 544, ll. 14-18). He further acknowledged that non-participating customers would not see a financial benefit from any reduced cost shift

until a future general rate hearing. (Tr. p. 503; p. 508, l.23 – p. 508, l. 15; p. 584, l. 19 – 585, l. 1). As a result, the public would not see an immediate reduction in utility bills if the DESC’s proposed Solar Choice Metering Tariff goes into effect. (Tr. p. 504, ll. 2-6). Witness Rooks also noted that “a general rate proceeding involves a full determination of the costs of the utility,” agreeing that the Commission may in those proceedings look at the Company’s possible revenue declines in the context of load growth and other issues that may affect costs. (Tr. p. 509, ll. 7-14).

DESC Witness Kassis testified that the DESC’s proposed Solar Choice Metering Tariff complied with Act 62 and that it would reduce but not eliminate a cost shift per the Company’s cost shift methodology. (Tr. p. 170, ll. 5-13). Witness Kassis testified more specifically that DESC’s Solar Choice Proposal reduces the “cost-shift...arising under the current NEM program, which particularly benefits non-participating low-income customers.” (Tr. p. 17, ll. 10-14). However, when asked how and when low-income customers would benefit from the reduced cost shift under DESC’s Solar Choice Proposal, Witness Kassis referred again to the \$1 per month charge that residential customers pay under the current NEM program, which will not apply to solar choice customers. (Tr. p. 89, ll. 14-20; p. 91, l. 9 – p. 93, l. 3). In response to a question from Commissioner Williams, Witness Kassis clarified that the elimination of the recovery mechanism under Act 236 would benefit low to moderate income customers. (Tr. p. 208, l. 20 – p. 209, l. 12).

DESC Evidence of Impact to Solar Market

Witness Kassis testified that DESC’s Solar Choice Proposal would permit customer-generators to offset their energy usage from DESC in the same way that

customers can offset their usage under the current NEM programs and that customer-generators would not be charged a “premium” based on the amount of self-supplied energy that they consume. (Tr. p. 19.13, ll. 8-13). Witness Kassis also acknowledged that there could be months when customer-generators would not see any savings on their bills from self-consumption of behind the meter electricity generated from their rooftop solar array when accounting for the increased BFC and the new Subscription Fee. (Tr. p. 107, l. 20 – p. 109, l. 7). In addition, customers who reduce their consumption from energy efficiency or conservation measures would continue to receive bill savings at the retail rate, whereas customers under the DESC’s proposed Solar Choice Metering Tariff would not see bill savings from their reduced consumption of DESC’s electricity from behind the meter consumption. (Tr. p. 109, ll. 8-14). Instead, any potential bill savings would come from purchases of DESC’s electricity at steeply discounted off-peak rates (in combination with any exports at avoided cost rates). (Tr. p. 108, l. 10 – p. 109, l. 7; p. 198, ll. 6-18).

Witness Kassis also testified that while DESC “did participate in a stakeholder process” as part of the generic proceeding, it did not host a separate stakeholder process for this proceeding. (Tr. p. 134, l. 20 – 135, l. 25). Witness Kassis noted that DESC did hear directly from some market participants regarding their thoughts on a tariff design and felt adequately informed as to stakeholders’ positions. (Tr. p. 19.8, ll. 13-17). At the hearing, however, Witness Kassis was unable to identify what “market participants” the Company had spoken with or what specific input they incorporated into their proposal. (Tr. p. 143, ll. 3-10; p. 144, l. 23 – p. 145, l. 25). Witness Kassis further conceded that DESC did not conduct any outreach with the intervening parties in this proceeding. (Tr. p. 133;

Tr. p. 19.8, ll. 6-17).

DESC Witness Robinson presented testimony on a range of solar PV adoption forecasts in DESC territory. Witness Robinson examined three components of customer economics for adopting solar: the simple payback period, return on investment, and customer bill ratio. (Tr. p. 385.4, l. 18 – p. 385.5, l. 1). Witness Robinson estimated that payback periods under the DESC’s proposed Solar Choice Metering Tariff would be 6.9 years, 8.9 years, or 9.7 years under low, mid-, and high-cost scenarios for a cash-purchased 3 kW residential system. (Tr. p. 385.13). In calculating the payback periods, DESC Witness Robinson assumed that the federal investment tax credit would be extended at 30% in the “low-cost” scenario. (Tr. p. 385.6, ll. 17-18).

At the hearing, Witness Robinson theorized that the price of solar may actually decrease under the DESC’s proposed Solar Choice Metering Tariff depending on how solar installers respond to the “slightly lower payback.” (Tr. p. 451, ll. 13-16). But Witness Robinson also acknowledged that a less attractive payback period may have the opposite effect, causing solar installers to leave the state because it is no longer profitable as was the case in Nevada. (Tr. p. 455, l. 19 – p. 456, l. 13).

Intervenor Direct Testimony

SACE, CCL, Upstate Forever, Vote Solar, NCSEA, and SEIA Witness Tom Beach (hereinafter “Joint Witness Beach”) presented testimony opposing the DESC’s proposed Solar Choice Metering Tariff, stating that the Company’s proposed tariff was based on a variety of improper assumptions and methodologies and would not comply with the mandates of Act 62. Joint Witness Beach testified that, taken together, the DESC’s

proposed Solar Choice Metering Tariff would reduce bill savings for an average NEM customer⁸ by 55% compared to the current NEM program and would only be economical for customers with high energy consumption and small solar systems that were designed to offset no more than 40% of the customer's load.(Tr. p. 753, ll. 14-19). For a typical customer, even after taking into account federal and state tax credits, Witness Beach calculated that the payback period for DESC's Solar Choice Proposal would be over 20 years. (Tr. p. 753, l. 14 – p. 754, l. 2). In response to the testimony from DESC Witness Robinson regarding payback period, Joint Witness Beach notedthat Witness Robinson's calculations were based on a small 3 kW-DC system whose output is only about one-third of the typical annual usage of residential solar customers, and far smaller than the 7 kW-AC system size on which DESC Witness Everett based hercalculations. (Tr. p. 756.23, l. 17 – p. 756.24, l. 16).

Witness Beach further explained that bill savings under DESC's proposal are not sensitive to the size of the system due to the monthly Subscription Fee, which would largely offset any bill savings from adding an additional kilowatt of solar capacity. (Tr. p. 756.25, ll. 1-11). As a result, Joint Witness Beach testified that DESC'sproposal would make it uneconomical for residential customers to install any system larger than about 3 kW-AC. *Id.* Joint Witness Beach also testified that the Subscription Fee, coupled with low volumetric rates, would send price signals to customers encouraging inefficient energy use. (Tr. p. 754, ll. 3-20). Indeed, Joint Witness Beach testified that the DESC's proposed

⁸ Defined as a customer with an average monthly energy usage of 1000 kWh and with an 8kW rooftop solar system installed.

Solar Choice Metering Tariff would only be economic for residential customers with significantly above-average energy usage and very small 3 kW-AC systems. *Id.* Witness Beach testified that customers could only save money under the DESC’s proposed Solar Choice Metering Tariff by consuming energy at the lower rate. (Tr. p. 756.25, l. 12 – p. 756.26, l. 6).

Joint Witness Beach questioned DESC’s justification for the Subscription Fee, concluding that DESC improperly assumed that all T&D costs allocated to residential customers are “fixed.” (Tr. p. 756.29). Witness Beach noted this approach was inconsistent with DESC’s own cost-of-service studies, where the utility recognizes transmission and most distribution costs as demand-related. *Id.* Joint Witness Beach testified that DESC’s proposal did not comply with Act 62’s directive to consider “the cost of service implications of customer generators on other customers within the same class.” (Tr. pp. 756.29 – 756.30). Witness Beach noted that Witness Everett’s residential load and solar profiles showed that, in the top 10% of residential peak demand hours, solar customers reduced peak loads by 29% of solar nameplate capacity; according to Witness Beach, this provides further evidence that distribution costs, like transmission costs, are not “fixed” costs that solar customers cannot avoid. (Tr. p. 756.30, l. 1 – p. 756.31, l. 11).

Joint Witness Beach further took issue with DESC Witness Everett’s overall rate design approach, stating that “the utility has sought to ‘reverse engineer’ a rate that, in essence, would ensure that a solar customer contributes the same amount of revenue to DESC that it paid before adding solar, except for a modest amount of avoided energy and generation capacity costs derived from the avoided cost pricing for wholesale qualifying

facilities (QFs).” (Tr. p. 756.28, l. 23 – p. 756.9, l. 4). At the hearing, Witness Beach attributed this approach in part to the fact that it is “very easy to calculate...the revenues that Dominion might have realized if somebody hadn’t put solar on their roof” but it is “more difficult to calculate ...the benefits to the utility of customer producing their own power on their own premises, using their own private capital, and what those benefits are over 25 years.” (Tr. p. 807, ll. 17-24). Witness Beach testified that, rather than taking a look at the costs and *benefits* of solar as Act 62 requires, “Dominion seems to think that the benefits side has already been set.” (Tr. p. 804, ll. 5-12). Witness Beach offered that, when properly valuing the benefits of rooftop solar, there is no potential cost shift under the current NEM structure or the Joint Solar Choice Proposal. Witness Beach emphasized the importance of quantifying all benefits of solar, such as avoided costs for generation, and avoided T&D costs over the full life cycle of a solar installation. (Tr. p. 752, ll. 15-25; p. 766, ll. 6-14). Witness Beach noted that almost “every other study in the US that has looked at avoided cost for distributed solar has considered avoided T&D costs.” (Tr. p. 806). When asked on cross-examination about whether the \$1 DER NEM incentive that customers pay under the current NEM structure was a “cost-shift,” Witness Beach testified that he would “agree that people pay that cost, but they’re also getting benefits in the long run from reduced utility investments in infrastructure that will more than offset what they pay in that line item.” (Tr. p. 782, ll. 2-19).

Witness Beach gave an example of how rooftop solar provides quantifiable benefits to the utility by reducing T&D costs. He explained that “a 7 kilowatt system that’s serving 80 or 90 percent of the customer’s usage” will produce more power than the customer uses

in the middle of the day “and that power will go out to the grid and serve the customer’s neighbors” and “when the power goes out to the grid, it doesn’t go very far. It serves...the neighbors [a]nd it displaces power that the utility would have to generate in a far-off power plant and then transmit and distribute over its wires to reach those neighboring customers.” (Tr. p. 789, l. 11 – p. 790, l. 14). As a result, because the customer-generator’s investment “frees up space in the utility’s wires that it can use to serve other customers[,]... transmission-and-distribution costs are avoided by distributed solar; you’re putting generation right down where the load is, and you need a few hundred feet of wires instead of, you know, hundreds of miles of wires.” *Id.* Over the long run, these benefits can save the utility money because the utility can “take that space that’s freed up in their transmission-and-distribution system and use it to serve new customers, to serve new loads, like electric vehicles.” *Id.* Witness Beach noted that California, which has the largest solar market in the country, has recently canceled \$3 billion of otherwise planned investments in transmission due to a combination of rooftop solar and energy efficiency. (Tr. p. 808, ll. 6-22).

Witness Beach objected to two other aspects of DESC’s Solar Choice Proposal. With respect to the BFC, Witness Beach testified that DESC’s proposed increase in the BFC for solar customers from \$9.00 to \$19.50 was not reflective of customer-related costs, which he argues should be limited to metering, service drop, billing, and customer service costs required to provide access to the grid. (Tr. p. 756.31, ll. 15-20). With respect to DESC’s proposal to change from annual netting to fifteen-minute interval netting, increasing the amount of exports that are credited at PURPA avoided cost rates as opposed

to retail rates, Witness Beach testified that this change was not necessary because, as demonstrated by his cost-benefit analysis, the actual costs avoided by the utility from private investment in distributed solar are comparable to retail rates. (Tr. p. 756.31, l. 27 – p. 756.32, l. 2).

Witness Beach concluded that DESC's proposal was, as a whole, contrary to the legislative intent underlying Act 62 because it would "place unreasonable new limitations on the size of the solar systems that would be economic to deploy in DESC's service territory" and would "clearly disrupt the solar market." (Tr. p. 756.28, ll. 1-16). At the hearing, Witness Beach agreed with Chairman Williams that the solar industry under DESC's Solar Choice Proposal would not survive in its current form. (Tr. p. 802, l. 24 – 803, l. 17).

SEIA/NCSEA Witness Justin Barnes also testified in opposition to DESC's Solar Choice Proposal. Witness Barnes testified that the Company's proposed Subscription Fee would effectively charge customers for the electricity produced behind the meter because the Company calculates the charge based on the amount of energy the customer uses behind the meter that would otherwise have been purchased from the Company. (Tr. pp. 915.15 – 915.52). Witness Barnes equated this methodology with levying an extra charge on those customers who reduce their electricity consumption with energy efficiency measures. (Tr. p. 915.52, ll. 9-11). Witness Barnes further disputed the Company's assertion that its proposed Subscription Fee is based on its embedded T&D costs associated with solar customers; Witness Barnes testified that such costs may be identified only through an embedded cost of service study of solar customers, which the Company has not yet

conducted. (Tr. p. 915.52, ll. 12-20; *see also* HE. 2 [Vote Solar Everett Cross Ex. 6]). Witness Barnes testified that, while other jurisdictions have imposed subscription fees, those fees were lower than those proposed by DESC and were in support of more reasonable objectives, such as a New York program that collects a charge to support public benefit programs like energy efficiency incentive programs. (Tr. pp. 915.53 – 915.54).

Witness Barnes next critiqued the TOU periods under DESC's proposal, noting that under the proposed TOU periods solar customers would not receive price signals that would encourage them to act in a way that reduces costs to their broader rate class. (Tr. p. 915.36, ll. 5-14). Witness Barnes testified that the TOU periods under DESC's Rate 5 would be preferable and that it would be "discriminatory" to subject solar customers to a separate, special TOU rate. (Tr. p. 915.35; Tr. p. 910, ll. 20-25). Witness Barnes further noted that, compared with the TOU rates under DESC's Solar Choice Proposal, Rate 5 has a larger "rate spread" between on-peak and off-peak prices and would thus provide a greater incentive for customers to modify their usage behavior. (Tr. p. 915.34, ll. 8-19). In particular, the rate spread under Rate 5 is 8.2 cents/kWh and 3.8 cents/kWh higher during the summer and winter, respectively, compared with the rate spread under the DESC's proposed Solar Choice Metering Tariff. *Id.*

Witness Barnes additionally criticized DESC's proposal to change from annual netting to fifteen-minute interval netting. He explained that under the current NEM program, a customer-generator that exports more energy than it imports earns "credits" for the amount of the net export to the following month. (Tr. p. 915.10, l. 15 – p. 915.11, l. 2). In contrast, under DESC's proposal, monthly retail netting would be replaced with a

“regime that places a monetary value on all exports (i.e., no monthly netting) and applies that value as a monetary credit to the customer’s bill at the end of the month.” (Tr. p. 756.11, ll. 3-11). Witness Barnes labeled DESC’s proposal to eliminate netting entirely in favor of PURPA avoided costs for all exports as “dramatically punitive” and more extreme than the versions of monetary crediting adopted in other jurisdictions. *Id.* Witness Barnes recommended that the Commission retain the annual netting regime and rely on the retail TOU rate to provide the correct price signal for both load and exports. Witness Barnes recommended that the Commission retain the annual netting regime and rely on the retail TOU rate to provide the correct price signal for both load and exports. (Tr. p. 756.28, l. 8 – p. 756.30, l. 9).

Witness Barnes testified that Act 62 requires DESC to conduct a cost of service analysis that examines solar customers as a separate class of customers for analytical purposes. (Tr. p. 915.18, ll. 1-11). He explained that, without such a study, the Commission cannot reach any conclusion about the existence or magnitude of a cost shift. *Id.* Witness Barnes testified that it is important to examine solar customers as a separate class because on-site solar generation system influences a customer’s load shape, which in turn affects the load shape of their otherwise applicable rate class that ultimately determines the allocation of different types of costs. (Tr. p. 915.18, ll. 12-22). Witness Barnes testified that DESC currently uses a summer coincident peak allocator for production and transmission costs and a non-coincident peak allocator for distribution costs, and that solar customers provide a considerable benefit to their respective classes for production and transmission demand-related costs because the timing of the peak matches well with good solar

production. (Tr.p. 915.19, l. 9 – p. 915.20, l. 12). Because rooftop solar contributes to peak production, it ultimately saves all ratepayers money because DESC needs to build less generation and transmission. (Tr. p. 925, l. 19 – p. 926, l. 7). Witness Barnes was unable to determine the precise impact of solar customers on non-coincident peak distribution costs because the cost of service materials made available by DESC did not contain the information necessary to make these calculations. (Tr. p. 915.21, ll. 10-18).

Using the data that was available, Witness Barnes estimated that, had there been no residential solar on DESC's systems, the production and transmission costs allocated using the coincident peak allocator would have been roughly 0.33% higher (47.07% vs. 46.74%), meaning that without solar customers, the residential class would have been allocated an additional \$787,000 in DESC's most recent rate case, or \$0.01159/kWh. (Tr. pp. 915.22 915.23). Witness Barnes qualified his testimony by noting that he was not able to fully reconstruct the cost of service value of residential solar to the residential class because DESC's cost of service filings did not include all of the necessary information. (Tr. p. 915.24, l. 18 – p. 915.25, l. 13). Lastly, Witness Barnes testified that the cost of service calculations should not be fully determinative for the Commission because Act 62 had other directives beyond eliminating any identified potential cost shift to the greatest extent practicable. (Tr. p. 915.25, l. 14 – p. 915.26, l. 21).

ORS Witnesses Robert Lawyer and Brian Horii provided testimony regarding two proposed modifications to DESC's proposed tariff that they argue would be required to eliminate all potential cost shift.

DESC Rebuttal Testimony

In rebuttal, Witness Everett responded to Witness Barnes’ testimony that “one of the critical deficiencies in Dominion’s proposal is that it lacks support from a cost of service evaluation” by stating that DESC had “conducted a cost of service analysis of the current NEM program” in the Generic Docket “as required by Act 62.” (Tr. p. 239.6, ll. 11-17). According to Witness Everett, “for purposes of designing rates for the Solar Choice Tariffs,” DESC “leveraged” the embedded cost of service study prepared for DESC’s ongoing rate case in Docket No. 2020-125-E. (Tr. p. 239.7, ll. 1-3). During cross-examination Witness Everett clarified this rebuttal testimony, confirming that she had not actually “performed the analysis described by Act 62 to look at whether customer-generators, treated as a class for analytical purposes only, would provide an adequate relative rate-of-return relative to other classes.” (Tr. p. 369, ll. 8-20; *see also* Tr. p. 550, ll. 10-14 (agreement by DESC Witness Rooks) and Hearing Exhibit No. 2 p. 2). On cross-examination, Witness Everett also agreed with the statement that the “basic idea of [her] rate design was to find a way to collect something close to the same revenue that you collected from customers before they installed solar, with some offset for behind-the-meter consumption valued at avoided cost rates.” (Tr. p. 258, l. 21 – p. 259, l. 2).

Witness Everett addressed Witness Beach’s testimony concerning the benefits of solar, testifying that societal benefits are “based on theoretical measures,” “hypothetical,” and “too difficult to quantify to have any real effect on rates” or “justify an increase cost-shift in order to prop up the solar industry.” (Tr. p. 238.38, ll. 5-12). However, in response to a question from Chairman Williams at the hearing, Witness Everett acknowledged that

“there are some benefits to non-solar users to have more solar development.” (Tr. p. 349, ll. 14-21).

Witness Everett also responded to the testimony from Witnesses Beach and Barnes regarding the specific components of the DESC’s proposed Solar Choice Metering Tariff. In defense of the proposed BFC of \$19.50, Witness Everett stated that it was not a “penalty” because it is “tied to a customer’s usage of DESC’s system” and “reflective of costs...incurred serving these customers, such as meters and billing.” (Tr. p. 236, ll. 12-22). Witness Everett testified that she “carefully studied” DESC’s cost of service study and that after she “examined” that study, she determined DESC would not adequately recover those “basic” customer costs unless the BFC was set to \$19.50. (Tr. pp. 239.16, ll. 11-15, 239.18, ll. 5- 13). Witness Everett disagreed with Witness Barnes that the \$19.50 BFC recovered distribution costs and testified that the customer-related costs in DESC’s cost of service study do not include distribution costs. (Tr. p. 239.15, ll. 10-12). However, as DESC Witness Kevin Kochems testified in the Company’s pending rate case,⁹ DESC does classify a significant portion of shared distribution costs as customer-related in its cost of service study; these include a portion of overhead lines (FERC accounts 364-365), underground lines (FERC accounts 366-367), and transformers (FERC account 368). (Tr. p. 276, ll. 12-18; Docket No. 2020-125-E, Direct Testimony of Kevin Kochems, p. 16 ll. 9-12, Ex. KRK-1 at 3). While Witness Everett previously testified that she had “carefully studied” DESC’s cost of service study, when asked at the hearing about whether she was

⁹ The Commission took judicial notice of DESC’s pending rate case, Docket No. 2020-125-E. Tr. p. 510, l. 20 – p. 511, l. 1).

aware that the Company classified a significant portion of shared distribution assets as customer-related, Witness Everett confirmed that she did not “specifically study what was included” as customer-related costs in DESC’s cost of service study and that she “was not an expert on how DESC does cost-of-service.” (Tr. p. 276 ll. 12-19, 24-25). As a result, Witness Everett was not “able to say yes or no” regarding Witness Barnes’ assertion that distribution costs are included in the BFC. (Tr. p., 278, ll. 10-17). She further stated that it was not her testimony “to opine on whether or not the way that [DESC is] doing their cost-of-service study is appropriate.” (Tr. p. 279 ll. 17-19).

DESC Witness Everett justified the Subscription Fee by explaining that the fee “corresponds to the demands placed upon the transmission and distribution assets required to not only accommodate the customers load but also the exports arising from their system.” (Tr. p. 236, l. 22 – p. 237, l. 2). Witness Everett explained that though a NEM customer’s energy usage will decrease with behind the meter energy production the customer’s demands on the DESC system do not change because they are still pulling some energy from the system and also using the system to export energy. (Tr. p. 239.21, ll. 12-19). Because the costs that result from use of the DESC system increase with system size, Witness Everett asserted that it is logical to impose a Subscription Fee that relates to the size of a system. (Tr. p. 239.22, ll. 3-4).

Witness Everett also testified in rebuttal that the TOU rates in DESC’s Solar Choice Proposal are based on 2019 data and reflect the latest information on grid costs. (Tr. p. 239.27, ll. 1-13). Witness Everett described the Rate 5 TOU Structure preferred by Witnesses Barnes and Beach as a “30-year-old [rate] that has undergone minimal

modifications since its establishment.” (Tr. p. 239.35, ll. 18-20). Witness Everett further testified at the hearing that the new TOU rates will be “applicable for a sustainable period of time and reflect the current cost structure that Dominion has” and that the TOU rates are also “designed to create [a] maximum differential between peak and off-peak so that customers can see the benefits to generating during off-peak [sic] periods.” (Tr. p. 346, l. 9 – p. 347, l. 7). Witness Everett did not suggest that the Company should update its cost of service allocators to be consistent with her proposed changes; she also did not respond to Witness Barnes’s observation that the higher rate spread in Rate 5 TOU incentivizes customers to take more advantage of TOU rates.

In rebuttal, Witness Everett also testified that the 15-minute netting in the DESC’s proposed Solar Choice Metering Tariff was appropriate. (Tr. p. 239.16, l. 16 – p. 239.17, l. 14). She noted that Witness Barnes recommended a banking scheme that assumes the value of an export is equal to the retail rate even though DESC values PURPA avoided costs much lower than the retail rate. *Id.* As a result, Witness Everett testifies that Witness Barnes’s proposal would continue to result in a “rate design” cost shift. *Id.*

Witness Everett also did not respond to the Witness Beach’s arguments that the components of the DESC’s proposed Solar Choice Metering Tariff, specifically the high fixed fees and low volumetric rates, would make solar uneconomic for most customers and encourage wasteful energy consumption among the few customers who still see bill savings. Witness Everett did, however, acknowledge that it is “definitely a possibility” that less ratepayers will decide to install solar because the benefits are not the same under DESC’s proposal. (Tr. p. 352, l. 20 – p. 352, l. 1). Witness Everett also agreed with

Chairman Williams that a reduction in savings for current customer-generator with a 7.2 kW system from about \$1350 per year to about \$340 per year would be a “material” cut. (Tr. pp. 355 – 356).

DESC Witness Kassis disputed Witness Barnes’ claim that the Subscription Fee is a penalty for behind the meter consumption by noting that the “fee is not tied in any way to the amount of energy consumed” and instead recovers T&D costs that arise from the customer-generators two-way flow of energy. (Tr. p. 23, ll. 17-23). More generally, Witness Kassis claimed that the testimony and solar choice proposals submitted by intervenors were self-interested and not aligned with the interests of the “using and consuming public.” (Tr. p. 26.8, ll. 12-17). At the hearing, when asked whether he was aware that intervenors CCL, SACE, and Upstate Forever are nonprofit public-interest organizations without a financial stake in the outcome of this docket, Witness Kassis suggested that those organizations were using this docket to fundraise but did not offer any evidence in support of that contention. (Tr. pp. 98 – 99).

DESC Witness Robinson testified in rebuttal that declining solar installations are not due to decreasing residential rates. (Tr. pp. 390.3 – 390.5). He explained that solar PV adoption has been declining since 2017, which suggests that solar has reached the “long-run equilibrium market share.” (Tr. p. 413, l. 11 – p. 414, l. 8). Witness Robinson went on to distinguish various sources of pricing data for solar and compared his sources to those used by Witness Barnes. (Tr. p. 390.8, l. 18 – p. 390.11, l. 6). DESC Witness Robinson also testified that Witness Beach’s assertion that the Subscription Fee favored wealthy customers with small systems required more analytical support. (Tr. p. 390.14, ll. 6-15). In

particular, Witness Robinson stated that it was only possible to analyze the impact of the DESC's proposed Solar Choice Metering Tariff on smaller systems with access to customer load profiles. *Id.* Witness Robinson further disagreed with Alder Energy Witness Zimmerman's testimony that payback period was over emphasized by commercial and industrial solar adopters. (Tr. pp. 390.16 – 390.17).

Intervenors' Surrebuttal Testimony

In surrebuttal, Joint Witness Beach responded to various claims made by DESC Witnesses Everett and Robinson. Witness Beach joined Witness Barnes in critiquing the TOU periods developed by Witness Everett for DESC's Solar Choice Proposal, noting that its "on-peak" periods were not aligned with DESC's system coincident peak. (Tr. p. 760.20, l. 10 – p. 760.21, l. 7). In particular, Joint Witness Beach noted that DESC allocates its generation and transmission costs based on coincident peak usage during the peak summer afternoon (typically in July) from 2:00 to 6:00 p.m., which would only overlap by two hours with the DESC's proposed Solar Choice Metering Tariff summer on-peak period of 4:00 to 8:00 p.m. *Id.* Joint Witness Beach testified that this would send the wrong price signals to solar customers, as the higher on-peak rate would encourage rooftop solar customers to reduce their consumption from 6:00 to 8:00 p.m. when the Company does not experience its system peak, and conversely, a lower off-peak energy rate from 2:00 to 4:00 p.m. would encourage solar customers to consume more energy when the Company *does* experience its system peak. (Tr. p. 760.21, ll. 1-20). Joint Witness Beach further noted that there was no reason for DESC, in developing its proposal, to deviate from the TOU periods set forth in its existing residential TOU Rate 5, which uses a standard summer 2:00 to 7:00

p.m. peak period that does align with the Company's system coincident peak. *Id.* Joint Witness Beach also testified that solar customers should not be subject to a unique TOU rate; because TOU rates are intended to signal when energy is more or less valuable to the system as a whole, those signals should not vary within customer classes. *Id.*

Witness Beach also responded to Witness Everett's claim that he was overvaluing the benefits of solar. Witness Beach testified that the health benefits from reductions in criteria air pollutants and benefits of reducing the societal damages from climate change were not "hypothetical." (Tr. p. 760.17, ll. 1-13). In addition, Witness Beach pointed out that DESC's 2020 IRP assumes carbon costs of \$25 per metric ton for compliance with future greenhouse gas regulations. (HE. 11 [Ex. RTB- 2, p. 15]). Witness Beach noted that it is "standard economics to attempt to 'internalize' real externalities that are direct costs to society as a whole, but that today are not direct costs to the utility." (Tr. p. 760.17, ll. 1-13). Witness Everett agreed in discovery that externalities should be included in marginal or avoided costs if they can be measured. *Id.* If the Commission is not comfortable quantifying certain societal benefits of rooftop solar in its avoided cost calculation, the benefits could instead be given weight in other aspects of the Commission's review, such as by offsetting any uncertainties in the direct benefits. (Tr. p. 769, l. 23 – p. 770, l. 10; Tr. p. 760.17, l. 14 – p.760.19, l. 10).

In response to DESC Witness Robinson, Witness Beach testified that a load analysis was not required to deduce that coupling a fixed per-kW Subscription Fee, with low volumetric rates would only provide savings to large residential energy users with small solar PV systems. (Tr. p. 760.24, ll. 9-23). Witness Beach testified that as system

sizes increase, the Subscription Fee would quickly offset additional bill savings resulting from additional solar output; Witness Beach calculated that, for a customer who increased their solar capacity from 2.5 kWAC to 6.9 kWAC, their additional bill savings would be just \$6 under the DESC's proposed Solar Choice Metering Tariff, compared to \$72 under the current NEM structure. *Id.*

Witness Barnes' surrebuttal testimony noted Dominion did not actually study how solar modifies a customer's cost of service and the effects that this has on other customers within a solar customer's broader class. (Tr. p. 917.8, ll. 1-3). Witness Barnes reiterated that, according to his review of DESC's embedded cost of service study, any supposed cost shift from solar to non-solar customers is minimal or non-existent, and thus the Subscription Fee designed to eliminate it serves no purpose. (Tr. p. 917.18, ll. 4-7). At the hearing, Witness Barnes further explained his cost shift conclusion, noting that "a non-participating residential customer is not paying appreciably more, because they have solar customers also with the rate class...[and] by generating during peak times, solar is reducing the allocation of cost to the customer's otherwise applicable class." (Tr. p. 946, ll. 3-11). Witness Barnes also testified Act 62 requires the Commission to balance cost-of-service considerations with other public policy objectives, and that because solar choice tariffs are a forward-looking tariff while cost of service studies are backwards-looking, DESC's embedded cost of service study should not be fully determinative. (Tr. p. 917.9, ll. 1-5).

Witness Barnes also responded to DESC Witness Robinson's arguments regarding the impact of retail rates on solar adoption. Witness Barnes observed that, despite Witness Robinson's assertions to the contrary, there is a correlation between retail rate increases

and solar adoption. (Tr. pp. 917.29--917.30). Witness Barnes disagreed with Witness Robinson's found the data to be biased, and asserted: "The authors [of the solar cost data] properly acknowledge certain caveats, such as the fact the data may not reflect current prices by the time the report is issued, and has some limitations in scope" Tr. p. 917.30, l. 15—Tr. . 917.31, l. 2. Witness Barnes also testified that Witness Robinson's average cost figures for installed solar in South Carolina are systemically biased towards lower amounts because the source relied upon by Witness Robinson is biased towards reporting lower costs. (Tr. p. 917.30-32). Barnes continued: "To be clear though, nowhere do the authors suggest that it is 'low quality' or biased in any way beyond the fact that there is an unavoidable lag in the timing of the report relative to the data on which it is based." He continued: "Accordingly, costs may be slightly lower on average today, but they would have had to decline by an extraordinary amount over a short period of time to reach the costs that Witness Robinson uses in his analysis." (Tr. p. 917.31, ll. 2-8); see also p. 917.30, l. 10—p. 917.33, l. 3). Witness Barnes further criticized Witness Robinson's testimony as misstating the federal solar investment tax credit, which currently is set at 26%, not 30% as testified by Witness Robinson. (Tr. p. 917.34, ll. 7-17). "To make it abundantly clear, the December 2020 extension of the solar ITC did not include an increase in the ITC from 26% to 30%," Barnes testified. (Tr. p. 917.31, ll. 9-11).

SACE, CCL, and Upstate Forever Witness Moore submitted surrebuttal testimony detailing his involvement in the legislative process and drafting of Act 62. Witness Moore concluded that because DESC's Solar Choice Proposal would not provide a reasonable opportunity to reduce both solar customer bills and utility costs, it would violate the statute.

(Tr. pp. 824 – 826). Witness Moore testified that DESC and ORS did not fully comply with the provisions of Act 62 in their proposals, noting at least three sections in Act 62 that they ignored or only partially addressed. (Tr. p. 825). Witness Moore noted that large fixed fees such as the proposed Subscription Fee would render the TOU component of a rate meaningless and reduce opportunities for customers to manage their bills. (Tr. p. 831.15, ll. 6-11). Witness Moore also highlighted the provision in Act 62 that requires “consideration of mitigation to address any rate shock caused by shifts in solar rates.” (Tr. p. 826, ll. 18-20).

Witness Moore further testified that DESC’s definition of cost shift is incorrect because it does not consider the benefits of rooftop solar. (Tr. p. 828). Witness Moore listed several ways that those benefits reduce utility costs and save money for all ratepayers, explaining that solar customers reduce fuel costs, provide a hedge against fuel volatility, generate avoided T&D benefits, and avoid generation capacity. *Id.* Regarding avoided generation capacity, Witness Moore explained that customers who install rooftop solar make room for new utility customers and reduce the need for DESC “to build new power plants, which are the most expensive part of the utility system.” (Tr. p. 828, l. 19 – p. 829, l. 2). During cross examination, Moore testified that it was prudent to also consider avoided carbon emissions, as Witness Beach did, when quantifying the benefits of rooftop solar; he explained that though there is currently no carbon tax, there is a high chance that there will be a carbon cost during the lifecycle of rooftop solar assets. (Tr. pp. 851 – 852). He noted that DESC itself is planning in its IRP for numerous scenarios with a carbon cost because “you can’t do it retroactively when [a carbon cost] hits.” *Id.* Witness Moore testified that

future avoided costs, such as avoided carbon, “can be either greater than or lower than today’s retail rates, because those retail rates are, by definition, backward-looking.” (Tr. p. 854, l. 24 – p. 855, l. 1).

When asked specifically about existing cost-shift during cross-examination, Witness Moore testified that, in his opinion, neither DESC nor ORS had established the existence of a cost shift. Witness Moore testified that because DESC did not conduct a cost of service study looking at the actual usage profiles of solar customers, “the assertion that there’s a cost shift is not founded on the type of evidence that would be needed to create it.” (Tr. p. 846, l. 23 – p. 847, l. 11).

In response to Witness Kassis’ suggestion that SACE, CCL, and Upstate Forever’s involvement in this docket was driven by self-interest, Witness Moore also asserted that SACE, CCL, and Upstate Forever “have no financial stake in the solar industry, and—unlike Dominion—no financial interest in the outcome of this proceeding.” (Tr. p. 823).

ii. Commission Conclusions

The Commission is required to balance all the factors in Act 62 in determining whether DESC proved by the preponderance of the evidence that its Solar Choice Proposal complies with the Act 62. Each of the factors the Commission finds relevant to its conclusions here are discussed below.

DESC Cost Shift Methodology

As an initial matter, the Commission finds that DESC’s methodology for calculating cost shift, as discussed in the testimony of Witness Everett, is unreasonable because it does not consider all of the benefits of customer generated solar. The Commission finds

not considering all of the benefits of customer generated solar as inconsistent with Act 62.

Concerning DESC's assertion that there is currently a substantial cost shift from NEM to non-NEM customers that must be mitigated through its proposal, the NEM DER incentive that is currently on customer bills will not be collected in relation to customers who accept service under the new solar choice tariffs. The Commission's decision on what solar choice tariff will apply for customers that apply after May 31, 2021, will have no impact on the NEM DER incentive amount. Currently, the NEM portion of the DER incentive accounts for approximately 46 percent of the monthly NEM DER rider for residential customers, which is capped at \$1.00. (Tr. pp. 544 – 545). As Witness Lawyer conceded at the hearing, were the Company to quantify the value of avoided T&D costs in the current NEM value stack, that incentive amount would go down. (Tr. p. 1003, l. 25 – p. 1003, l. 6). In addition, the NEM DER incentive is specifically intended to allow the utility to collect lost revenues from current NEM customers; however, Act 62 specifically provides that utilities may not collect lost revenues from solar customers who apply after May 31, 2021. This is one of several indications that Act 62 did not intend for solar choice tariffs to be used as a mechanism for the utility to collect lost revenues from solar customers.

Further, the Commission finds credible the testimony of Witness Barnes showing that, even under the Company's current embedded cost of service study, the potential cost shift under current retail rate net metering is only minimal. As Witness Barnes testified, solar customers provide a benefit to their respective classes for production and transmission costs because the timing of the Company's summer peak—which is the basis

of how it allocates costs to customers— matches well with solar production. In addition, Witness Barnes testified that solar customer-generators provide benefits to reducing demand-related distribution costs for their class.

As shown by Hearing Exhibit 2, the Company did not undertake a cost of service analysis to evaluate its solar customers for analytical purposes only, as was required by Act 62. Had the Company conducted such a study, it could have compared the cost to serve solar customers against the amount the Company receives from solar customers as relevant evidence relating to potential cost shifts.

Subscription Fee and Increased BFC

The Commission finds that DESC's proposed \$5.40 per kW Subscription Fee is unreasonable and not cost-based. Further, we conclude that DESC's proposed increase to the BFC is unsupported by evidence in the record and when combined with DESC's proposed Subscription Fee, would effectively penalize solar customers for their behind-the-meter usage in violation of Act 62.

DESC has not provided sufficient evidence that its proposed Subscription Fee would be necessary to recover additional transmission and distribution costs associated with customers who have larger solar systems. DESC did not conduct the cost-of-service analysis required under Act 62 in order to determine the actual transmission and distribution costs associated with solar customers. The evidence in this proceeding, as presented by Witness Barnes and Joint Witness Beach, shows that DESC allocates its transmission and generation costs based on summer coincident peak, and that rooftop solar—which is highly productive during that time—helps to reduce demands on the

utility's transmission and generation system. As described by Witness Beach, the imposition of the Subscription Fee on solar customers is a penalty "because it doesn't reflect the fact that distributed solar actually can avoid transmission and distribution costs, and it treats...distributed solar as not being able to avoid those costs at all by establishing that fixed subscription fee." (Tr. p. 599).

The DESC proposed Subscription Fee also disincentivizes customers from installing rooftop solar systems capable of offsetting all of their usage, contrary to the definition of "customer-generator" included in Act 62. S.C. Code Ann. § 58-40-10(C)(5). The Commission finds that DESC's proposed Subscription Fee could improperly incentivize large residential energy users to install a small solar system in order to access the tariff's low volumetric rates, because as DESC Witness Rooks admitted, a solar customer would only be able to save money under DESC's Solar Choice Proposal by their electricity consumption being at a lower volumetric rate. (Tr. p. 524 l. 22 – p. 525 l. 3). Energy efficiency measures help to keep utility costs down by reducing consumption and avoiding the need for the utility to invest in more infrastructure to serve its customers, costs that would otherwise go into rate base. The price elasticity of electricity follows fundamental principles of economics: all other things being equal, reducing volumetric rates for electricity can result in increased consumption. As a result, DESC's proposal is contrary to the General Assembly's finding that there is a "critical need" to protect customers from rising utility costs and to reduce or manage their consumption in a manner that contributes to reduction in peak demand and offers a reasonable opportunity to employ energy and cost-saving measures such as energy efficiency, demand response, and rooftop

solar to reduce consumption of electricity.

In sum, DESC's proposed Subscription Fee is contrary to Act 62, and because DESC has not conducted a cost of service analysis on solar customers and has not adequately accounted for the benefits of rooftop solar on its transmission and distribution system, there is no evidence in the record to demonstrate that DESC's proposed Subscription Fee would reasonably recover its transmission and distribution costs for solar customers.

The Commission further concludes that DESC's proposed increase to the Basic Facilities Charge for solar choice customers from \$9.00 to \$19.50 is unjustified. While DESC claims this increase is necessary to recover the "customer-related costs" for solar choice customers, this high BFC is being proposed only for solar customers; in its ongoing rate case, DESC is proposing a BFC of \$11.50/month for standard residential customers and \$15.50/month for residential customers under TOU rates. (Tr. p. 915.38). At the hearing, DESC Witness Rooks acknowledged that the Company had no intent to move the entire residential class to a \$19.50 BFC. (Tr. p. 511 ll. 4-22). DESC witnesses also acknowledged that this component of its Solar Choice Proposal would remain even if the Commission rejected DESC's categorization of customer-related costs in the ongoing rate proceedings. (*See* Tr.pp. 303, 609).

This proposed BFC of \$19.50, particularly in combination with the proposed Subscription Fee, will make solar uneconomic for most customer-generators and effectively penalize behind the meter use. As acknowledged by DESC Witness Kassis, when taking into account DESC's proposed new fixed customer charges and fees, a

customer who self-generates and consumes 500 kilowatt hours from a rooftop solar array in a month like March (with no on-peak periods, keeping the calculation straightforward), would still end up owing more to DESC than a typical residential non-solar customer today. (Tr. pp. 107-08). Such a customer would receive a bill credit of \$33.68 for that self-consumption (500 kW multiplied by the low off-peak rate of \$0.06735/kWh), which is more than exceeded by the non-bypassable fixed fees of \$46.50 (for a 5 kW PV system). *Id.* That bill credit instead can only apply to offset the first 500 kilowatt hours consumed from DESC. Thus, before consuming a single electron supplied by DESC's grid and after consuming 500 kilowatt hours of self-generated electricity behind the meter, a solar choice customer would be in a worse position than a customer under Rate 8 without solar who has not self-generated any electricity.

Consistent with our interpretation of Act 62, a solar tariff improperly penalizes behind the meter consumption if a customer-generator would pay more under that tariff than if they did not have solar, when considering the non-bypassable charges and fees on their utility bills and after accounting for the self-consumption of energy used behind the meter. Therefore, the Commission concludes that DESC's Solar Choice Proposal improperly penalizes customers for installing solar and consuming self-generation behind the meter in violation of Act 62.

Export Rates

The Commission agrees with the position raised in testimony in this proceeding that, for the purposes of a residential customer-generator, the appropriate period of time to consider for netting of energy is an annual netting period. During this annual netting period,

on-peak generation is to offset on-peak usage, and off-peak generation will net against off-peak usage. The resulting surplus energy at the end of the yearly netting period will be credited to customer-generators at the avoided cost rate.

For the non-residential customer-generators, which warrant a slightly different consideration and valuation of exported energy: all excess on-peak generation shall be rolled over, monthly, as bill credits only against subsequently on-peak consumptions. All annual excess net exports of energy will be applied as a bill credit at the same rate that the Commission determines in its order in Docket No. 2019-182-E.

TOU Periods

The Commission finds that the TOU periods in DESC's Solar Choice Proposal are unreasonable because they do not align with the peak periods identified in the Company's cost of service study. DESC's Solar Choice Proposal would charge customers a steeply discounted volumetric rate during a period that corresponds with DESC's summer coincident peak, which it uses to allocate all its generation and transmission costs to customers. As Witness Barnes testified, this would provide a skewed incentive to solar choice customers to consume more energy from DESC during those periods and contribute to increasing the residential class's contribution to system peak, potentially increasing costs for all residential customers. This is inconsistent with the General Assembly's finding, as provided in Act 62, that there is a "critical need" to protect customers from rising utility costs. It is also inconsistent with Act 62's statement that customers have a right to reduce their consumption through energy efficiency and rooftop solar, and that rates should align customers' incentives to install those measures in a manner that reduces electrical utility

costs.

Ensuring Access for Customer-Generators and Impacts to Solar Market

The Commission concludes that the DESC's proposed Solar Choice Metering Tariff would reduce customer bill savings to the point of disrupting the rooftop solar market in South Carolina. For an average customer, the DESC's proposed Solar Choice Metering Tariff would reduce bill savings compared with the current NEM program by 55%; due to the Subscription Fee, savings opportunities would decrease even more dramatically for customers with systems sized to offset a significant amount of a customer's load. We reject DESC Witness Robinson's conclusion that payback periods would only be minimally extended under DESC's Solar Choice Proposal. Payback periods would substantially increase for all customers except those with much smaller-than-average rooftop solar systems. (Tr. p. 756.23, l. 17 – p. 756.24, l. 16). The payback period associated with this reduction in bill savings would increase from 9.4 years under current NEM tariff to 20 years. *Id.* And for the many customers that lease rooftop solar, the monthly reduction in bill savings that would result from DESC's proposal would be sufficient enough to discourage adoption of distributed solar altogether. (Tr. p. 915.75 ll. 4-19). Witness Barnes further testified that:

the solar installation market in Dominion's territory is already under considerable economic stress under the current net metering regime. Changes to that regime that negatively impact customer bill savings would exacerbate that distress. The changes that Dominion seeks are severe to the point that they could effectively eliminate the customer-sited solar industry in its territory

(Tr. p. 915.59, ll. 3-8). Solar markets are very sensitive to customer bill savings, and as

Witness Barnes testified negative impacts in customer bill savings would have a substantial impact on the solar market in South Carolina.

Therefore, the Commission concludes that DESC's Solar Choice Proposal would impede customer access to solar by reducing customer bill savings to the point of disrupting the solar market in South Carolina in violation of Act 62.

Overall Conclusions

In sum, the Commission concludes that DESC did not prove by the preponderance of the evidence that its Solar Choice Proposal complies with Act 62 for the following reasons:

- DESC used a methodology to calculate cost shift that was unreasonable and contrary to numerous requirements in Act 62.
- The BFC and Subscription Fee in DESC's proposal would improperly penalize behind the meter usage in violation of S.C. Code Ann. § 58-40-20 (G)(2).
- The DESC's proposed Solar Choice Metering Tariff would reduce customer bill savings to the point of disrupting the rooftop solar market in South Carolina.
- DESC did not consider whether mitigation measures for existing solar customers, particularly customers who lease solar systems, would be warranted.

B. Evaluation of ORS Proposed Modifications

**EVIDENCE AND CONCLUSIONS SUPPORTING FINDINGS OF FACT
NOS. 12-15**

i. Summary of Evidence

The evidence in support of these findings of fact is found in the pleadings, testimony and exhibits in this Docket, and the entire record in this proceeding.

ORS Direct Testimony

DESC Witness Robert Lawyer testified that ORS does not object to DESC's proposal and recommends two modifications to the DESC's proposed Solar Choice Metering Tariff. (Tr. p. 978.4, ll. 4-15). Witness Lawyer testified that both modifications are aimed at reducing the "cost-shift" of proposed rates. *Id.* ORS first recommends reducing the Subscription Fee in the DESC Solar Tariff and instead recovering some of the T&D revenue through increased TOU energy charges. (Tr. p. 978.5, ll. 1-3). ORS next recommends modifying the TOU rates so that they are calculated based on the energy that customer-generators are expected to purchase from DESC, rather than the energy that would have been consumed by the customer prior to the installation of solar. (Tr. p. 978.5, ll. 4-8).

Witness Lawyer testified that ORS's focus in this proceeding was only to eliminate any cost-shift. (Tr. pp. 986, ll. 10-15, 987). Witness Lawyer conceded that there were other aspects to Act 62, but ORS felt those interests were represented by the other parties in the docket. He also stated that he was not offering an opinion as to how the Commission should balance the requirements in Act 62 (Tr. pp. 981, ll. 19-23, 1034, ll. 22-24). Witness Lawyer testified that ORS's sole focus on the cost-shift provisions in Act 62 was consistent with

ORS's duty to represent the using and consuming public. (Tr. p. 1011, ll. 11-23). Witness Lawyer testified that ORS gives equal weight to the concerns of solar and non-solar customers. (Tr. p. 1026, ll. 10-21). But when Chairman Williams asked why ORS's analysis was limited to only cost-shift and "wouldn't a residential rooftop solar user want ORS to consider the benefits of solar," Witness Lawyer acknowledged that those solar customers would want ORS to consider the benefits. (Tr. p. 1026, l. 22 – p. 1027, l. 1). Witness Lawyer also disclosed that he had not personally heard any customer complaints concerning cost shift, only complaints regarding the size of electrical bills. (Tr. p. 1024, l. 15 – p. 1025, l. 8).

ORS Witness Brian Horii provided testimony summarizing the reasoning behind ORS's two recommended modifications. (Tr. p. 1055). Despite recommending modifications, Witness Horii testified that DESC's proposal was consistent with the rate design components that E3, Witness Horii's energy consulting firm, presented in its 2018 Report on Cost Shift in South Carolina. (Tr. p. 1060.5).

Witness Horii first recommended reducing the Subscription Fee based on his finding that that solar installation size, which DESC relied on when setting the fee, is actually a poor indicator of the transmission and distribution costs associated with a customer and that a demand charge based on a customer-generator's maximum energy usage or energy exports would be more accurate and cost-correlated. (Tr. p. 1060.12, ll. 3-14). To better reflect the total cost of transmission and distribution costs net the avoided cost of solar, Witness Horii recommended reducing the Subscription Fee to \$3.25/KW-month for residential customer-generators. (Tr. p. 1060.12, ll. 10-19). Witness Horii

cautioned that his proposed Subscription Fees would need to be further modified if the Commission adopted non-zero values for avoided T&D costs. (Tr. p. 1060.14, l. 14 – p. 1060.2, l. 2).

Witness Horii also recommended adjusting DESC's proposed energy rates. Witness Horii testified that DESC should calculate the rates based on a customer-generator's usage after the solar is installed because DESC's proposed rates, which are based on customer usage prior to the installation of solar, would result in an under-collection of energy costs once solar is installed and usage decreases. (Tr. p. 1060.15, l. 13 – p. 1060.16, l. 2). Witness Horii also recommended increasing the TOU rates to collect T&D costs that are not collected by the Subscription Fees. (Tr. p. 1060.16, l.).

Witnesses Horii and Lawyer accepted without objection DESC's "revenue neutral" approach to designing its Solar Choice Proposal. (Tr. p. 996, ll. 2-18; Tr. p. 1060.8, ll. 6-8). The only error that Witness Horii identified in DESC's cost shift estimate was that DESC's failure to evaluate actual post-solar customer bills resulted in an underestimation of the cost shift. (Tr. p. 1060.9, ll. 3-9). Witness Horii noted that DESC had no plans to conduct an analysis of the cost shift based on an embedded cost of service study, but presented his own cost of service study on behalf of ORS. (Tr. pp. 1060.3, ll. 20-22, 1060.26, ll. 12-16). Witness Horii testified that he had to make certain "simplified assumptions" when conducting his analysis because he did not have the time or the necessary data to run a full embedded cost of service study. (Tr. p. 1092, ll. 6-25). In his analysis, Witness Horii relied on previous avoided cost orders by the Commission to estimate the production capacity of solar, though he testified later in the hearing that the

Commission should not feel constrained from changing avoided cost values as part of the generic docket. (*Id.*; Tr. p. 1106, ll. 12-25).

Ultimately, Witness Horii concluded that the avoided cost approach that DESC used to calculate cost shift produced essentially the same results as his embedded cost of service study. (Tr. p. 1060.31, l. 19 – p. 1060.32, l. 2). At the hearing, when responding to other parties' claims that he overestimated the cost shift, Witness Horii, like DESC, confirmed that he began his calculation for cost shift with an estimate of solar customer bill savings and then subtracted the avoided costs derived from his analysis. (Tr. p. 1057, ll. 5-21).

Like Witness Lawyer, Witness Horii testified that ORS approached this docket with a singular focus on eliminating cost shift. (Tr. p. 1100, l. 9 – p. 1101, l. 10). Witness Horii acknowledged that, as a result, the ORS proposal may be too extreme an option from the Commission's perspective. *Id.* He testified that, had he been hired by the Commission to recommend "the most balanced outcome" under Act 62, he would not recommend the ORS proposal. *Id.*

DESC Rebuttal Testimony

In his rebuttal testimony, DESC Witness Kassis testified that ORS's proposal to even further reduce the cost-shift under the DESC's proposed Solar Choice Metering Tariff was reflective of ORS's "fundamental statutory mission" to represent the interests of the using and consuming public. (Tr. p. 19.8, ll. 7-12). He characterized DESC's and ORS's proposals as "represent[ing] a good faith effort...to balance the policy provisions of Act 62...with the specific mandates put to this Commission." (Tr. p. 19.8, ll.1-4). At the

hearing, Witness Everett testified that ORS's Proposed Modifications were more aggressive at addressing cost-shift than DESC's SolarChoice Proposal. (Tr. p. 315, ll. 10-21). Witness Everett also testified that Witness Horii used the same types of cost of service analytics that she used in her rate design. *Id.*

Intervenors' Surrebuttal Testimony

Joint Witness Beach testified that ORS's Proposed Modifications to DESC's Solar Choice Proposal would reduce substantially—by about one-half to two-thirds—the available savings from solar systems of all sizes. (Tr. pp. 760.4 – 760.6). Witness Beach observed that such reduced savings would mean that only wealthy customers who are willing to pay more for electrical service would choose to install solar. (Tr. p. 760.5). Witness Beach concluded that such a tariff would erect an economic barrier to broad use of solar net energy metering and disrupt the solar market in DESC territory. (Tr. p. 760.9, ll. 4-22). Witness Beach highlighted that Witness Horii had not examined how his proposal would impact payback periods. (Tr. p. 760.10, ll. 1-6).

Witness Beach testified that ORS, like DESC, over estimated the cost shift by failing to quantify system wide benefits of distributed solar, including avoided transmission and distribution costs. (Tr. p. 760.11, ll. 3-14). Witness Beach testified that this failure to quantify the benefits of rooftop solar was inconsistent with Witness Horii's prior studies and testimony, and he quoted Witness Horii's testimony in the generic NEM hearing stating that "NEM systems can result in lower utility costs (benefits), such as lower energy production and procurement costs, lower generation capacity acquisition costs, and lower transmission and distribution capacity costs." (Tr. p.760.11, l. 15 – p. 760.14, l. 2).

Witness Beach also pointed out that one of the exhibits Witness Horii submitted on behalf of ORS listed twenty-three value of solar studies, twenty-two of which quantify avoided T&D benefits. (Tr. p. 806; *see also* Hearing Exhibit No. 14 [Ex. BKH-2, p. 29]). Witness Beach critiqued ORS's decision to merely look at the design of the DESC's proposed Solar Choice Metering Tariff, "taking the avoided costs as a given," and to not quantify the benefits of distributed solar. (Tr. p. 805, ll. 7-12). Based on Witness Horii's testimony and experience, Witness Beach concluded that Witness Horii could have quantified and evaluated the avoided transmission and distribution costs, as well as other benefits of distributed solar, had ORS asked him to do so. (Tr. p. 760.12, ll.4-15).

SEIA/NCSEA Witness Barnes testified that the embedded cost of service study on which ORS based its proposed Subscription Fee and TOU rates overstate the costs to serve solar customer based on the allocation methods used in DESC's embedded cost of service study. (Tr. p. 909, ll. 13-24). Witness Barnes also explained that DESC's and ORS's proposed Subscription Fees were based on a cost shift arising from a purported evaluation of solar customer cost of service. Specifically, Witness Barnes identified three flaws in Witness Horii's embedded cost of service study, testifying that Witness Horii: 1) calculated solar production capacity savings based on a different methodology than DESC actually uses for its embedded cost of service study; 2) incorrectly applied the coincident peak allocator for transmission costs; and 3) based his assessment of transmission capacity on the top "net load" peaks as opposed to the "total system load" methodology that DESC employs. After correcting these values, Witness Barnes conducted another embedded cost of service study using Witness Horii's method and found that the embedded potential cost

shift was effectively zero. As a result, Witness Barnes testified that the Subscription Fee proposed by ORS, which was designed to eliminate a cost shift, is unwarranted. *Id.* At the hearing, ORS Witness Horii responded, acknowledging the merit of Witness Barnes’s critique of his decision to use net load, but claimed that, because of the small impact on transmission, even correcting the value would indicate a large embedded cost-of-service cost shift. (Tr. p. 1056 ll.18 – p. 1057 ll. 4)

CCL, SACE, and Upstate Forever Witness Moore criticized ORS’s decision to focus its case on the single issue of eliminating cost shifting, which is only part of one of three legislative purposes stated in Act 62. (Tr. pp. 825, ll. 6-13, 827, ll. 1-10). Witness Moore observed that the General Assembly directed cost shifts to be eliminated “to the greatest extent practicable” and not to the exclusion of other legislative goals. (Tr. p. 827, ll. 13- 25) Moore Surrebuttal, p. 17, ll. 10-14. When asked by Chairman Williams why ORS would take such a narrow approach in this docket, Witness Moore noted that Witness Horii conducted the 2018 E3 Cost Shift report under Act 236 in 2018, but that Act 62 superseded Act 236 and offered a “more complete vision” of what was contemplated. (Tr. p. 900, l. 22 – p. 901, l. 2). Witness Moore pointed out that because ORS’s cost shift study was conducted prior to the enactment of Act 62 in May 2019 it, unsurprisingly, failed to consider each of the goals set out in Act 62. (Tr. p. 831.20, ll. 10-14).

ii. Commission Conclusions

The Commission finds the ORS Proposed Modifications to DESC’s Solar Choice Proposal do not meet the requirements in Act 62. The stated intent in Act 62 is not “to eliminate any cost shift.” The General Assembly stated the intent of the Act to “build upon

the successful deployment of solar generating capacity through Act 236 of 2014” and “avoid disruption to the growing market for customer-scale distributed energy resources” and “establish solar choice metering requirement that fairly allocate costs and benefits to eliminate any cost shift to the greatest extent practicable.” S.C. Code. Ann §58-40-20(A). Act 62’s directive to eliminate any cost shift “to the greatest extent *practicable*,” requires the Commission to consider, weigh, and balance eliminating the cost shift with Act 62’s other stated directives.

ORS Witnesses Lawyer and Horii confirmed at the hearing that ORS considered only the cost shift issue when suggesting modifications to DESC’s Solar Choice Proposal. The impacts of such a proposal, as presented by Witness Beach , would be disastrous for the solar industry in South Carolina; the ORS modifications to DESC’s Solar Choice Proposal would make rooftop solar economically unviable for DESC’s customers because it would effectively cost customers more for electric service than it would cost without solar. S.C. Code Ann. § 58-40-20(A)(1).

The Commission is also not convinced that Witness Horii’s cost of service study and cost shift estimate are accurate. The evidence presented by Witness Beach demonstrated that Witness Horii failed to quantify benefits of distributed solar that he has acknowledged should be quantified in prior testimony before this Commission and in previous studies. Witness Barnes also testified that Witness Horii’s cost of service study departed from accepted DESC methodology in ways that significantly underestimated the value of solar and overestimated the corresponding potential cost shift. Witness Horii himself testified that the study was based on “simplified assumptions,” old avoided cost

values, and limited data. As a result, though the precise value of solar continues to be in dispute, the Commission finds that Witness Horii’s analysis should not be used as an estimation of cost shift to non-participants.

C. Evaluation of Joint Intervenors’ Proposed Solar Choice Tariff

**EVIDENCE AND CONCLUSIONS SUPPORTING FINDINGS OF FACT
NOS. 16-27**

i. Summary of Evidence

The evidence in support of these findings of fact is found in the pleadings, testimony and exhibits in this Docket, and the entire record in this proceeding.

Joint Intervenors’ Solar Choice Proposal

The Joint Intervenors have proposed a residential Solar Choice Tariff (“Joint Solar Choice Proposal”) with the following features:

- (1) a requirement to take service under Rate 5 TOU rate, which provides a more accurate and cost-based rate that can also serve as a platform for additional DERs that customer-generator may adopt (such as electric vehicles).
- (2) a minimum bill based on properly calculated customer-related costs. The Joint Solar Choice Proposal includes a \$13.50 minimum bill (which would include a \$9.00 BFC) as a placeholder for the purpose of analyzing the proposal, recognizing that the exact minimum bill and BFC should be set only after the Commission determines in the pending rate case whether it is improper to consider distribution grid costs (such as poles, wires, and transformers) as “customer-related.”
- (3) maintaining annual netting, but crediting excess on-peak generation against

on- peak usage (and excess off-peak generation against off-peak usage), with any excess exports credited at avoided cost rates at the end of each year, which encourages sizing of systems to no more than offset their annual usage.

(Tr. p. 756.12, l. 6 – p. 756.13, l. 7).

Joint Intervenors' Direct Testimony

Joint Witness Beach testified that the Joint Solar Choice Proposal would result in a modest reduction in bill savings up to 8%, depending on customer usage and system size. (Tr. p. 756.12, ll. 8-16; Tr. p. 620, ll. 3-17). The Joint Solar Choice Proposal would include an immediate imposition of a minimum bill (provisionally set to \$13.50). (Tr. p. 756.13, l. 20 – p. 756.14, l. 2). Consistent tariff structure and availability over a reasonable investment period are necessary for providing certainty to potential customer-generators. Ten years, representing a reasonable investment period, also represents the minimum number of years allowable for customers taking service under the new tariff to have access to the tariff. “In my experience, simple paybacks of this length (about 10 years) represent a reasonable, but not outstanding investment for residential customers, and are consistent with the moderate growth that has characterized the residential solar market in South Carolina under Act 236.” (Tr. p. 756.23, ll. 13-16.)

Witness Beach provided the results of standard cost-effectiveness tests (that were also recommended in the generic docket, No. 2019-182-E) of the Joint Solar Choice Proposal, consistent with Act 62’s mandate to examine the benefits and costs from the perspective of the utility system as a whole, participating solar customers, and other ratepayers. (Tr. p. 756.13, ll. 12-25). Witness Beach used the categories of values for DER

generation that were approved in Commission Order No.2015-194, but with actual values for the benefits of DERs (rather than the zero values for some of those benefits put forward by DESC). (Tr. p. 756.13, l. 12 – p. 756.14, l. 2). Witness Beach’s analysis considered the long-term, life- cycle analysis of benefits and costs of distributed generation, taking into account the usefullife of a solar rooftop system, which is typically at least 25 years. (Tr. p. 756.14, ll. 3-10).

Under the standard practice manual tests for cost-effectiveness (Participant Test, Utility Cost Test, Total Resource Cost Test, and Societal Cost Test), Witness Beach found that the benefits of the Joint Solar Choice Proposal outweighed the costs. (Tr. p. 756.20, ll. 5-8). As a result, it is more likely than not that the Joint Solar Choice Proposal will, in the long-run, reduce the utility’s cost of service, not cause a cost-shift to non-participating customers, maintain the viability of the rooftop solar market, provide quantifiable benefits to all customers, and provide additional societal benefits that are difficult to quantify. (Tr. p. 756.20, l. 4 – p. 756.21, l. 12).

NCSEA/SEIA Witness Barnes testified in support of an alternative solar choice tariff proposal that closely mirrors the Joint Solar Choice Proposal. As with the Joint Solar Choice Proposal, Witness Barnes recommends that the BFC be set at the same amount as for the standard residential rate schedule (\$11.50 if the Commission approves the Company’s proposed increase in the pending rate case; \$9.00 if the BFC remains unchanged), that DESC incorporate a minimum bill at a level that corresponds to the otherwise applicable TOU rate (\$15.50 if the Commission approves DESC’s change to Rate 5 in the pending rate case), customer-generators adopt otherwise available TOU rates

(after at least one-year of granular usage data is available), and that the tariff retain the existing annual netting by TOU rates. (Tr. p. 915.77, l. 11 – p. 915.78, l. 6).

Witness Barnes provided additional testimony on the alignment of the existing Rate 5 TOU rate with DESC's cost of service. Witness Barnes observed that Rate 5 meets all of the criteria that Witness Everett required for a solar choice TOU design; it has at least three consecutive months of seasonal peak periods that last at least four hours. (Tr. p. 915.34, ll. 8-19). But unlike DESC's proposed Solar Choice Metering Tariff, Rate 5 has a bigger spread between on- and off-peak volumetric rates, sending a stronger price signal to avoid usage during the system peaks. (Tr. p. 915.34, ll. 8-19). Witness Barnes testified that Rate 5 better aligns with the Company's cost of service because it overlaps with the Company's summer afternoon coincident peak. (Tr. pp. 915.35– 915.37). Witness Barnes testified that, if DESC's existing Rate 5 is not reflective of the Company's cost of service, then DESC has significant problems with its rate design that go beyond the scope of this docket. (Tr. p. 915.37, ll. 11-15).

Witness Beach concurred that "DESC's standard TOU periods...align more closely with DESC's system peak loads than the proposed Solar Choice tariff TOU Periods." (Tr. p. 760.20, l. 10 – p. 760.21, l. 20). In addition, Witness Beach testified that if TOU rate periods need to be adjusted more broadly, those changes should be made for all residential customers so that consistent price signals will be sent across the entire class. *Id.*

DESC Rebuttal Testimony

DESC Witness Everett testified that the proposals from Witnesses Beach and Barnes would result in an increased cost shift. (Tr. p. 237, l. 15 – p. 238, l. 6). Specifically,

Witness Everett disagreed with the value of solar calculation that Witness Beach offered; she testified that both witnesses' decision to quantify societal benefits suggested a desire to ignore Act 62. (Tr. p. 239.38, l. 7 – p. 239.39, l. 4). Witness Everett did not address the fact that societal benefits were only included in one of the four cost-benefit tests the Joint Solar Proposal passed. Witness Everett disputed Witness's Beach conclusion that benefits of exported distributed solar could exceed the Company's current embedded costs (as reflected in retail rates) by about 15%. (Tr. p. 239.35, ll. 10-14). Witness Everett reiterated that her calculation of cost shift is based on the bill savings that current NEM customers receive after adopting rooftop solar (the "banking" and "rate design" cost shifts) and a presumption that those bill savings—lost revenue to DESC—will ultimately be collected from nonparticipants in a future general rate case. (Tr. pp. 239.34 – 239.35). Witness Everett noted that, assuming any lost revenue to DESC from bill savings by customer-generators will later be collected from non-participating customers in the form of increased rates, it could raise concerns for how that future potential cost shift could impact low-income customers. (Tr. p. 239.36, ll. 14-21).

Witness Everett further objected to the Joint Solar Choice Proposal because it would continue to encourage "customers to build systems so large that the [sic] produce the amount of electricity the customer uses" while also relying on DESC to accept over 50% of the solar output and "bank" those credits for a year. (Tr. p. 239.36, ll. 3-10). Witness Everett did not square her objection to system sizes that offset all of a customer's electricity use with the definition of "customer-generator" in Act 62.

Regarding specific components of the proposal, Witness Everett testified that the

Joint Solar Choice Proposal would eliminate the BFC by replacing it with a minimum bill. (Tr. p. 239.35, ll. 15-18). DESC Witness Everett also disagreed that the residential Rate 5 TOU rate provides a more accurate and cost-based rate than the TOU rates proposed by the Company in its Solar Choice Metering Tariff. Witness Everett testified that DESC's proposed Solar Choice Metering Tariff is based on "updated 2019 data." (Tr. p.239.27, ll. 1-13).

Witness Everett also criticized Witness Beach's proposal to provide customers with a year of granular usage data before moving them to TOU rates, noting that customers under a solar choice tariff will not take service until at least 2025. (Tr. p. 239.27, l. 16 – p. 239.28, l. 9). However, Witness Rooks confirmed during the hearing that though the Company is in the process of rolling out advanced metering infrastructure, customers are not yet able to access hourly usage data. (Tr. p. 553, l. 16 – p. 556, l. 8).

ORS Hearing Testimony

ORS Witness Horii did not pre-file surrebuttal testimony but did comment on Joint Witness Beach's analysis at the hearing. Witness Horii testified that the Joint Solar Choice Proposal did not reduce cost shift enough, stating that an 8% reduction in cost shift would be inadequate; because this 8% figure referred to the estimated reduction in customer bill savings under the Joint Solar Choice Proposal, Witness Horii's testimony reiterated his assumption that bill savings are equivalent to cost shift. (Tr. p. 1100, l. 23 – p. 1101, l. 3).

With respect to Witness Beach's cost-effectiveness analysis, Witness Horii testified that Witness Beach overestimated avoided T&D costs (Tr. p. 1068, ll. 20-25). Witness Horii testified that he considers an ideal export rate to be close to current avoided cost with

only small additions to account for benefits. (Tr. p. 1098, ll. 7-23). In particular, Witness Horii testified that it was reasonable to look more closely at avoided T&D to see if it was worth accounting for those benefits in the avoided cost rate; he explained that if the system's need occurs at the same time that solar is generating that will reduce the need for local T&D, producing a benefit "that should be recognized." *Id.* Witness Horii also testified that it was "in the Commission's purview" to set avoided costs and that, in setting those values, the Commission should not feel constrained by previous orders, noting that the generic docket provided the Commission the opportunity to reevaluate those values. (Tr. p. 1106, ll. 15-25). Witness Horii acknowledged that Act 62's directive to consider the "benefits" of solar does not distinguish between direct, monetary, and societal benefits and testified that it was for the Commission to determine what those "benefits" are. (Tr. p. 1111, ll. 3-16).

Joint Intervenors' Surrebuttal Testimony

In surrebuttal, Witness Beach addressed Witness Everett's objection that "basic logic cannot support" a value of solar that is higher than the utility's current embedded costs, as reflected in retail rates. (Tr. p. 760.16). Witness Beach noted "Marginal costs measure how system costs change 'on the margin' due to a change in customer usage or demand. Marginal costs can be either above or below the historical system average costs that are 'embedded' in current rates." (Tr. p. 760.16, ll. 6-9). Beach also testified that "[m]arginal costs can exceed average/embedded costs particularly when there are system constraints or societal goals that require new investment in our energy infrastructure." (Tr. p. 760.16, ll. 9-11). Witness Beach went on to explain:

Examples of such constraints and goals are decarbonizing the electric system and making generation and T&D infrastructure reliable and resilient in the face of new threats and uncertainties from climate change. Marginal costs also can exceed embedded costs if energy costs are rising or if new capacity is needed to meet rising demand.

(Tr. p. 760.16, ll. 11-15).

In support of his conclusion, Witness Beach noted that Figure 5 of Exhibit BKH-2 from ORS Witness Horii's direct testimony included a comparison of the total marginal/avoided costs to the average/embedded cost residential rate for each of the twenty-three (23) utilities studied; for fourteen (14) of those twenty-three (23) utilities, the marginal/avoided cost was higher than the embedded cost as reflected in residential rates. (Tr. p. 760.16, ll. 15-20). Witness Beach also responded to Witness Everett's assertion that it is inappropriate to quantify "hypothetical" societal values. (Tr. p. 760.17). Witness Beach testified that "health benefits from reductions in criteria air pollutants, or the benefits of reducing the societal damages from climate change" are not hypothetical and can be measured. *Id.* Witness Beach also noted ORS Witness Horii's endorsement of the relevance of societal benefits when considering the value of solar or the potential trade-offs between Act 62's requirements. (Tr. p. 760.20, l. 10 – p. 760.21, l. 20). Witness Beach also noted that societal benefits need not be a direct input into a solar choice tariff in order to be considered by the Commission. *Id.*

Witness Beach testified that DESC's low value of solar ignores Section 58-40-20(D) of Act 62, which requires consideration of the benefits of distributed, customer-sited solar generation over the long term. (Tr. p. 760.11, ll. 1-14). Witness Beach testified that because solar systems are long-lived clean energy infrastructure, with a useful life of 25

years, it is “inaccurate and inequitable” to assess avoided utility costs only over a short-term period such as a single rate case cycle. (Tr. p. 760.11, ll. 1-14). At the hearing, Witness Beach further explained that while the energy benefits of distributed solar are recognized immediately, the capacity-related benefits will only become apparent over the long run, when the utility does not have to spend as much on its T&D system as it would have if distributed solar did not exist. (Tr. p. 766, ll. 6-23).

Witness Beach rejected Witness Everett’s testimony that the Joint Solar Choice proposal would harm low-income non-participating DESC customers because when accounting for the full suite of benefits of distributed solar generation, including avoided transmission and distribution costs that would otherwise be passed on to all ratepayers, all ratepayers benefit. (Tr. p. 760.22, l. 17 – p. 760.23, l. 8). In addition, under the Joint Solar Choice Proposal, bill savings for customers who install rooftop solar do not dramatically decrease, as they would under DESC’s proposal, providing low- and moderate-income households an opportunity to lower their bills by installing solar (including through a lease). *Id.*

In defense of the components of his proposal, Witness Beach refuted that the Joint Solar Choice Proposal would eliminate the BFC. Instead, the Joint Solar Choice Proposal would include a minimum bill that would include the otherwise applicable BFC *and* any potential difference between Commission-approved customer-related costs and the BFC. (Tr. p. 760.20). Witness Beach also explained in response to Witness Everett’s testimony concerning his proposed transition year to TOU rates that providing customers with access to at least a year of data on their time-varying use allows them to “understand the economics

of switching to a time-of-use tariff.” (Tr. p. 786, ll. 10-14).

CCL, SACE, and Upstate Forever Witness Moore testified in surrebuttal that the Joint Solar Choice Proposal was the only solar choice proposal that met the requirements of Act 62 and accordingly recommended that the Commission adopt it. (Tr. p. 829, ll. 18-22). Witness Moore further testified that this proposal gave the Commission “an opportunity to approve a tariff with no cost-shift that also meets the other public-interest goals, such as continuing to reward customer efficiency, customer demand-response.” (Tr. p. 849, ll. 10-17). Witness Moore observed that the Joint Solar Choice Proposal is a more “durable solution” than the one-to-one net metering in place today, in that the higher and lower rates at on-peak and off-peak times incentivize solar customers to lower their use during peak times to reduce costs for other customers. (Tr. p. 864, l. 21 – p. 865, l. 11).

ii. Commission Conclusions

The evidence presented demonstrates that portions of the Joint Solar Choice Proposal comply with and fulfill the intent of Act 62. Act 62 requires the Commission to balance the interests of all ratepayers, including customer-generators and non-participants when establishing solar choice tariffs, and to avoid disrupting the growing solar market in South Carolina. S.C. Code Ann. § 58-40-20.

Consistent with Act 62’s requirement to permit solar choice customer-generators to use customer-generated energy behind the meter without penalty, S.C. Code Ann. § 58-40-20(G)(2), the portions of the Joint Solar Choice Proposal approved herein appropriately value behind the meter consumption at prevailing retail rates and without the distorting effects of new fixed charges that artificially reduce the value of behind the meter

consumption. From the utility system perspective, behind the meter consumption of customer-generated electricity is equivalent to energy efficiency or demand-side management measures as a decrement to system load. The portions of the Joint Solar Choice Proposal adopted in this Order also comply with Act 62 because unjustified fixed charges on larger systems with the capacity to generate a significant amount of the customer-generator's energy needs are not imposed. DESC Witness Everett's objection to customers building large systems is inconsistent with Act 62's definition of customer-generator as one who installs on-site renewable generation that "is intended primarily to offset *part or all* of the customer-generator's own electrical energy requirements." S.C. Code Ann. § 58-40-10(C)(5) (emphasis added).

Witness Beach has demonstrated with his cost-benefit analysis that solar has benefits over the long-run, life cycle of distributed solar resources, and has therefore indicated that the portions of the Joint Solar Choice Proposal approved in this Order will not cause a significant cost-shift to non-participating customers. In contrast to the estimations of cost-shift presented by DESC and ORS witnesses, the Joint Solar Choice Proposal is based on a "long-run" assessment of the costs and benefits of solar; Act 62's directs the Commission to consider the "aggregate impact of customer-generator on the electrical utility's long-run marginal costs of generation, distribution, and transmission." S.C. Code Ann. § 58-40-20(D)(1). The Commission finds that it is reasonable to account for marginal cost effects of customer-generators based on a 20-year useful life.

Witness Beach clarified that he is not recommending that the BFC be eliminated, but rather that it be collected as a component of a new minimum bill, ensuring that

customer-related costs are collected from customer generators. The Commission also agrees with Witness Beach and Witness Barnes' recommendation to use the standard residential TOU Rate 5 rates as an approved portion of the Joint Solar Choice Proposal, but to set the BFC component of the solar choice TOU rate based on the prevailing residential rate (Rate 8). DESC Witness Everett did not justify the imposition of different TOU periods on solar customers. As TOU periods are intended to signal system-wide peaks, it is illogical and imprudent to send solar customers different price signals than are sent to other members of the residential class. Witness Beach's proposal to align on- and off-peak crediting with like consumption would incentivize solar customers to take advantage of on- and off-peak rates, ultimately helping to reduce peak demand and utility costs.

The portions of the Joint Solar Choice Proposal approved by this Order fulfill Act 62's intent and purpose to "continue enabling market-driven, private investment in distributed energy resources" and "avoid disruption to the growing market for customer-scale distributed energy resources." S.C. Code Ann. § 58-40-20(A)(1)-(2) (Supp. 2020). The Commission finds that the reduction in customer bill savings resulting from the adoption of portions of the Joint Solar Choice Proposal's compared to the existing NEM program to be reasonable and that it would not cause disruption to the solar market. As a result, adopting portions of the Joint Solar Choice Proposal in this Order will avoid disruption to the growing market for customer-scale DERs.

D. Evaluation of Non-Residential Solar Choice Tariffs

**EVIDENCE AND CONCLUSIONS SUPPORTING FINDINGS OF FACT
NOS. 28-29**

**i. Summary of Evidence Relative To Non-Residential Customer-Generation
And DESC's Small General Service Solar Choice Tariff**

DESC witness Rooks introduced and discussed the particulars of DESC's proposed Solar Choice Tariff for 'Small General Service Customers' ("DESC's Small General Service Solar Choice Tariff"). Witness Rooks further identified the alleged cost shift DESC calculated for nonresidential customers electing not to participate in customer-generation. Witness Rooks introduced DESC's Small General Service Solar Choice Tariff. The tariff contains the following components:

- a basic facilities charge of \$32.50,
- a subscription fee equal to \$6.50 per kW of installed capacity (minimum of \$48.75) (the "Subscription Fee"),
- a newly-developed time-of-use rate, and
- hourly netting. (Hr. Ex. 1.) Witness Rooks clarified that the Subscription Fee is intended to recover the utility's "transmission-and-distribution fixed system costs." (Tr. p. 494, ll. 11-15.).

Witness Rooks confirmed DESC's Small General Service Solar Choice Tariff incorporates several of DESC's existing rate schedules:

- Rate 3 [municipal power service],
- Rate 9 [general service],

- Rate 10 [small construction service],
- Rate 11 [irrigation service],
- Rate 12 [church service],
- Rate 13 municipal lighting service],
- Rate 14 [farm service],
- Rate 16 [time-of-use general service],
- Rate 22 [school service], and
- Rate 28 [small general service time-of-use demand].

(Tr. p. 486, ll. 19-20.). Specifically, Rate 9 can encompass, not only commercial businesses like banks and gas stations, but also “large manufacturing facilities” and “industrial facilit[ies] . . . producing chemicals.” (Tr. p. 486, ll. 1-8.). Witness Rooks admits DESC’s Small General Service Solar Choice Tariff captures a “wide swath” of its customers. (Tr. p. 487 ll. 1-4.).

Witness Rooks does not dispute that Alder Energy has installed large net-metered solar systems for DESC customers on Rate 9, including one for a manufacturing plant with a nameplate capacity of 714 kW DC. (Tr. p. 487, ll. 5-15.) Mr. Rooks also discussed an alleged cross subsidization and testified that the cost shift of non-residential customer-generation to nonparticipating customers is equal to twenty-eight (28) cents (\$0.28) per bill. (Tr. p. 490, ll. 6-9.). According to Witness Rooks, the total alleged cross subsidization across the entire class is \$332,880. (Tr. p. 490 ll. 18-20.). Witness Rooks concedes that figure is calculated from the number of nonresidential systems, which is “nowhere near the amount of NEM systems [seen] in the residential class.” (Tr. p. 490 ll. 10-17.). Finally,

Mr. Rooks acknowledges nonparticipating customers do not suffer any alleged cost shift until there is a general rate case. (Tr. p. 508 ll. 4-15.).

DESC witness Daniel Kassis confirmed that all nonresidential customers within the rate classes discussed by witness Rooks (Rates 3, 9-14, 16, 22, and 28) would be subject to DESC's Small General Service Solar Choice Tariff. (Tr. p. 37, ll. 1-5.). Mr. Kassis further did not dispute that Alder Energy sold and installed a near-600 kW behind-the-meter solar asset to a DESC ratepayer taking service under Rate 9. (Tr. p. 41, ll. 9-14.). As for an alleged cost shift, Kassis admits DESC's position is that medium and large commercial rate designs accurately capture costs to serve, as is, and therefore do not present a cost shift concern for purposes of nonresidential customer generation. (Tr. p. 47, ll. 14-25.).

Renewable Energy Credits

Witness Kassis addressed the issue of Renewable Energy Credits ("RECs") attributable to nonresidential customer-generation. Witness Kassis concedes that any RECs attributable to customer-generation for power consumed behind-the-meter should inure to the customer. Mr. Kassis further admits DESC's Small General Service Solar Choice Tariff does not expressly provide for customer ownership of those RECs. (Tr. p. 50, ll. 10 - Tr. p. 51, ll. 10.).

Advanced Metering Infrastructure

Witness Kassis conceded DESC does not have comprehensive rollout of advanced metering infrastructure ("AMI") within its service territory and that AMI is required to achieved hourly usage data for its customers. (Tr. p. 143, ll. 16- Tr. p. 144, ll. 22.).

Interpretation of Act 62

Lastly, Witness Kassis discussed S.C. Code Ann. § 58-40-20(G)(1)’s requirement to “ensur[e] access to customer-generator options” and agreed that ensuring access under Act 62 requires, in part, “favorable economics for nonresidential NEM customers.” (Tr. p. 73, ll. 8-14.).

DESC witness Scott Robinson was retained to prepare a market projection for distributed generation within DESC’s service territory for the time period spanning 2020-2030 under Existing NEM Policies, and under DESC’s Small General Service Solar Choice Tariff. (Hr. Ex. 4 p. 1; Tr. p. 393, ll. 7-11.).

Under Existing NEM Policies, Robinson projects growth of 69 MW AC of installed capacity, of which only 11.5 MW AC is nonresidential customer generation (approximately 1 MW per year for ten years). (Hr. Ex. 4 p. 1; Tr. p. 394, ll. 5-11.). According to Mr. Robinson, medium and large commercial and industrial nonresidential rate classes will experience “limited” growth over the next ten years, especially relative to small-commercial and other commercial (e.g., nontaxable entities like schools and churches). (Tr. p. 395, ll. 12-17.). Witness Robinson further described the nonresidential customer-generation market in DESC territory as “niche.” (Tr. p. 399, ll. 4-8.). Robinson’s projections and conclusions contained within Hearing Exhibit No. 4 assume that the Commission keeps status quo Existing NEM Policies through 2030. (Tr. p. 393, ll. 7-11.).

Witness Robinson forecasts projected DG growth under DESC’s Small General Service Solar Choice Tariff and provides three metrics for customer economics: (1) simple payback period, (2) return on investment and (3) customer bill ratio. (Tr. p. 383, ll. 1-4.).

For nonresidential customer-generation, Mr. Robinson’s forecasts show simple payback periods in the range of 5.8 to 8.1 years and return on investment in the range of 13% to 20.1%, depending on the economics of costs and federal tax policies. These data points are modeled from a 12.5 to 16.5 kW system size, based on “the customers’ load profile” and historical sizing. (Tr. p. 401 – Tr. p. 406, ll. 1-4.). To that end, Robinson testified that DESC’s Small General Service Solar Choice Tariff is designed to incentivize smaller distributed generation systems. (Tr. p. 441, ll. 21-24.). Witness Robinson used hourly data to derive his economic conclusions for customer-generation under DESC’s Small General Service Solar Choice Tariff and concedes—in order to understand customer economics under DESC’s Small General Service Solar Choice Tariff—“you need to know exactly how that customer’s use goes over the course of a day, 15 minutes at a time.” (Tr. p. 421, ll. 22- Tr. p. 422, ll. 22.).

Intervenor Witness Thomas Beach and was retained by some intervenors to, among other things, provide a competing Solar Choice Tariff for residential customers in DESC’s service territory (the “Joint Clean Energy Solar Choice Tariff”) (Tr. p. 286 – Tr. p. 290.3, ll. 4-6). Beach summarized the elements of the Joint Clean Energy Solar Choice Tariff as follows:

- residential customers receive service under DESC’s time-of-use Rate 5, following availability of a year of time-of-use data;
- a minimum bill that does not vary with usage; and
- annual netting, with equal credits against on-peak consumption. (Tr. p. 588, ll. 11-23.).

Witness Beach disagreed with ORS's position that the valuation of the benefits of distributed generation are limited to avoided energy and capacity costs. (Tr. p. 595, ll. 6-9.). That underscores Beach's opinion that the sister Solar Choice Tariff proceeding for Duke Energy Progress, LLC and Duke Energy Carolinas, LLC (collectively, "Duke") was settled, in large part, due to Duke's recognition of "significant avoided transmission-and-distribution benefits from distributed solar." (Tr. p. 595, ll.21-25.). Beach believes that the Subscription Fee in the DESC's Small General Service Solar Choice Tariff is a penalty because, like ORS, DESC failed to consider avoided transmission-and-distribution benefits from nonresidential customer generation. (Tr. p. 598, ll. 23 – Tr. p. 600, ll. 11-19) (emphasis added). Beach testified that his criticisms of the DESC's residential Solar Choice Tariff would apply equally to DESC's Small General Service Solar Choice Tariff. (Tr. p. 601, ll. 18-23.).

Intervenor Alder Energy Witness Donald Zimmerman testified on behalf of the nonresidential customers who have invested, or will invest, in distributed generation. (Tr. p. 665.). It is undisputed that Alder Energy does not lease customer-generation systems. Mr. Zimmerman testified plainly that, "the nonresidential solar industry will collapse in the DESC territory if the Commission approves [DESC's Small General Service Solar Choice Tariff]." (Tr. p. 666, ll. 1-4.). In that case, Alder Energy would exit DESC's nonresidential customer-generation market entirely. (Tr. p. 534.5, ll. 12.).

Mr. Zimmerman testified that payback period is the most useful metric for a customer considering an investment in nonresidential customer-generation (Tr. p. 666, ll. 9-12); that nonresidential customers traditionally will not consider an investment with a

payback exceeding eight years; and that nonresidential customers prefer a payback period in the range of four to seven years (Tr. p. 666, ll.20-25). Alder Energy supported Zimmerman’s testimony by admitting into evidence data points reflecting that the company has sold and installed forty (40) nonresidential distributed systems in DESC territory. (Hearing Exhibit No. 10.). Of those forty (40) systems, data showed that the average system size proposed and installed by Alder Energy in DESC territory is 90.48 kw DC; the average payback period is 5.45 years. *Id.* Mr. Zimmerman’s projections for these larger system sizes—the same ones Alder traditionally sells and installs—under DESC’s Small General Service Solar Choice Tariff show that payback periods may be “extended many years and, in some cases, beyond the useful life of the system” (Tr. p. 504, ll. 12-15). Witness Zimmerman thus believes an unfavorable decision from the Commission (i.e., adoption of the DESC’s Small General Service Solar Choice Tariff) is “likely to elongate the payback period and reduce a system’s return on investment, and thereby disrupt or even damage the DG solar market in the DESC territory.” (Tr. p. 666, ll. 20-24.).

Witness Zimmerman discussed the importance of Alder Energy’s customers retaining RECs attributable to their customer-generation because nonresidential ratepayers have economic and social interests in retaining the environmental attributes of customer-generation, often stemming from corporate sustainability goals. (Tr. p. 667, ll.1-6.).

Witness Zimmerman noted the importance of hourly data in determining customer economics of a nonresidential customer-generation facility. Specifically, Mr. Zimmerman testified that new customers cannot evaluate the economics of a system proposed under DESC’s Small General Service Solar Choice Tariff without hourly data from DESC. (Tr.

p. 674, ll. 9-25 – Tr. p. 675.). A customer’s monthly bill is not enough. (Tr. p. 679, ll. 11-13.). According to Witness Zimmerman, Alder Energy cannot “present an accurate representation of what a system can do . . . without hourly data.” (Tr. p. 675, ll. 21-25.).

ii. Commission Conclusions

First, DESC’s Small General Service Solar Choice Tariff is penal and thus violates S.C. Code Ann. § 58-40-20(G)(2) (Supp. 2020). On this point the Commission finds Witness Beach’s testimony persuasive.

Second, an alleged cost shift of \$332,880 (or 28 cents per bill) does not justify disrupting the already “niche” nonresidential distributed-generation market. The Commission finds Robinson’s testimony—that such a market is not sensitive to regulatory change (Tr. p. 396, ll. 14-25)—to be unpersuasive. Instead the Commission relies upon the evidence of Donald Zimmerman, who testified that approval of DESC’s Small General Service Solar Choice Tariff will be detrimentally harmful to future non-residential solar. (Tr. p. 667, ll. 7-9.).

Third, Witness Robinson’s projections for purposes of nonresidential customer-generation under DESC’s Small General Service Solar Choice Tariff are not well taken. Robinson modeled much smaller systems than the ones traditionally proposed by an actual market participant, Alder Energy. That is concerning considering ample testimony that the customer economics of DESC’s Small General Service Solar Choice Tariff incentivize smaller systems. Robinson undersells market disruption by not modeling systems sizes that are consistent with actual systems sizes being installed in the market. The Commission is mindful in this regard to continue enabling market-driven, private investment in

Distributed Generation and to avoid disrupting the growing market for Distributed Generation. S.C. Code Ann. § 58-41-40(A) (Supp. 2020).

VI. ORDERING PARAGRAPHS

NOW, THEREFORE, IT IS HEREBY ORDERED THAT:

1. DESC shall offer a Residential Solar Choice Tariff to all customers that apply for net metering on or after June 1, 2021 that consists of the components identified as follows:

(a) A requirement to take service under Rate 5 TOU rate, which provides a more accurate and cost-based rate that can also serve as a platform for additional DERs that a customer-generator may adopt.

(b) A minimum bill based on properly calculated customer-related costs. The portion of the Joint Solar Choice Proposal herein approved includes a \$13.50 minimum bill (which would include a \$9.00 BFC) as a placeholder for the purpose of analyzing the proposal, recognizing that the exact minimum bill and BFC should be set only after the Commission determines in the pending rate case whether it is improper to consider distribution grid costs (such as poles, wires, and transformers) as “customer-related.”

(c) Maintaining annual netting, but crediting excess on-peak generation against on-peak usage (and excess off-peak generation against off-peak usage), with any excess exports credited at avoided cost rates at the end of each year, which encourages sizing of systems no more than offset their annual usage.

(d) Non-residential customer-generators will take service under DESC’s Rate 16 [time-of-use rate general service].

(e) For non-residential customer-generators, all excess on-peak kWh shall be rolled over to the subsequent months as credits only against subsequent on-peak consumptions.

(f) For non-residential customer-generators, annual excess net exports will be applied as a bill credit at the same rate as the Commission determines in its Order in Docket No. 2019-182-E.

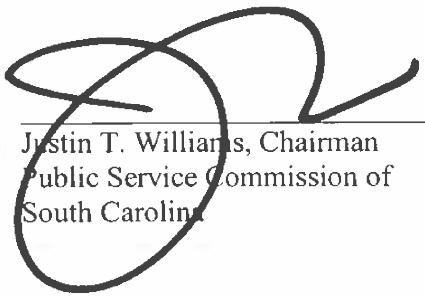
(g) The customer-generator shall have all rights and title to own and transfer RECs attributable to their generation.

2. These Tariffs shall remain available to customer-generators taking service pursuant to these tariffs on or after June 1, 2021, for a minimum period of ten years.

3. This Order shall remain in full force and effect until further order of the Commission.

BY ORDER OF THE COMMISSION:




Justin T. Williams, Chairman
Public Service Commission of
South Carolina